THE IRON AGE

Published every Thursday Morning by David Williams Co., 14-16 Park Place, New York.

Vol. 79: No. 20. *New York, Thursday, May 16, 1907* $5.00 a Year, including Postage. Single Copies, 15 Cents.

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New York, Thursday, May 16, 1907.

The Thomas Improved Spacing Machine.

For automatically feeding structural shapes and plates to a punch so that the holes will be the right distances apart, an improved universal spacing table has been designed and built by the Standard Bridge Tool Company, Pittsburgh, Pa. The machine, which is the invention of Geo. P. Thomas, an engineer of the company, is shown in the accompanying illustrations, Fig. 1 being a view of the spacer as operated in connection with the punch and Fig. 2 a detail of the carriage. These engravings represent one of the smaller sizes built, adapted for spacing angles up to 8 x 8 in. in size. The fixtures on the punch are arranged for the two rows of holes, usually required in the larger size angles. For handling plates up to about 30 in. wide the same spacer is used, except that the trailer table is provided with a carriage for guiding the material through the punch. On machines as shown, used exclusively for angles, this feature is omitted, as the proper gauge is maintained at the punch by a guide roller. In designing this machine the aim has been to produce a machine that would space accurately, be simple to operate and quickly set for any desired spacing. These features appear to have been attained and combined in this machine in a very practical way.

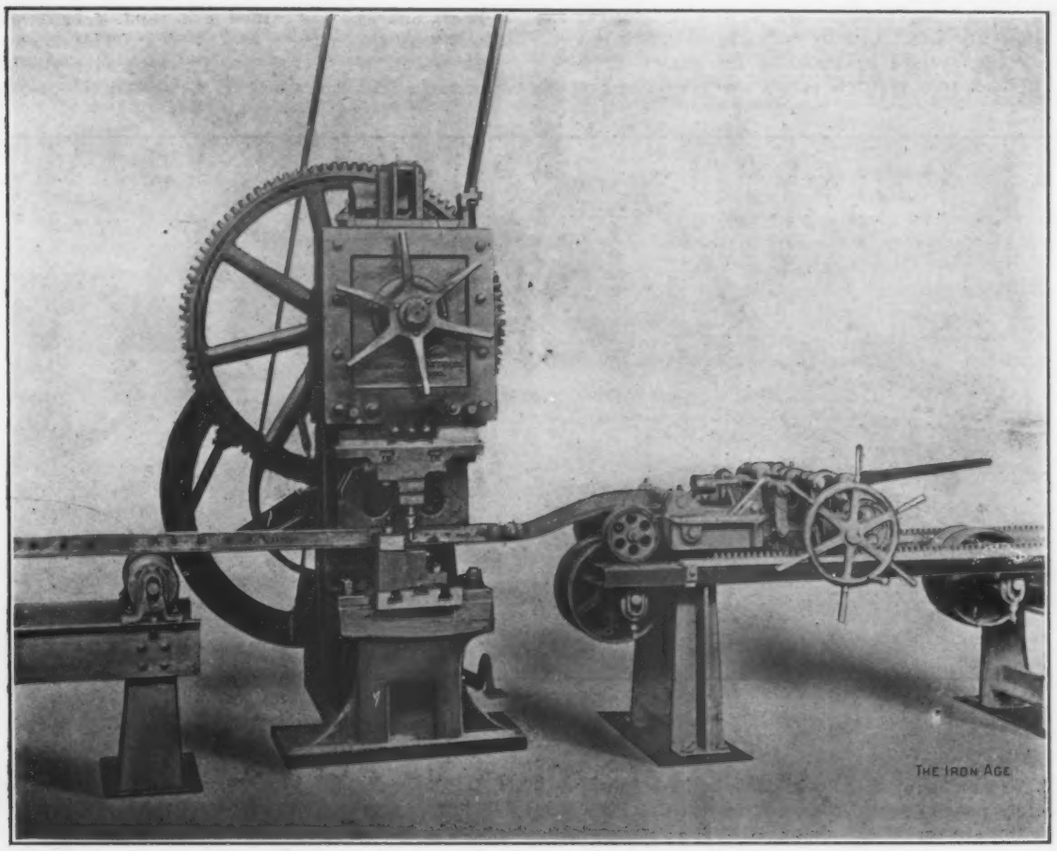


Fig. 1.—The Use in Connection with a Punch of the Thomas Universal Spacer, Built by the Standard Bridge Tool Company, Pittsburgh, Pa.

The chief objection to spacers heretofore has been the long time taken for setting. In a busy shop it is wasteful to have a valuable tool and its crew idle several hours every day. To obtain the best results from such machines, all the material having the same spacing had to be punched in one lot, a condition not always possible in these days of slow and uncertain delivery. If angles and plates had to be punched all had to be done on the same machine, or else two machines had to be set, with a consequent loss of time. An objection to spacing tables using stops clamped to the side of the machine for spacing is the tendency of the carriage to skew. This, while not important where angles or other shapes were handled, was apt to be troublesome when operating on plates.

With the machine illustrated the time required for setting is almost nil, and the responsibility for the proper spacing is placed where it rightly belongs, on the templet maker. A templet strip ¾ x 2 in. is prepared by the templet maker, short pegs are driven at the required points, and this is fastened to the side of the tables by clamps provided for the purpose, as shown in Fig. 2. This takes but an instant. After adjusting the guide roller and gag heads and die blocks the machine is ready to start, the whole time for setting not taking at most more than a few minutes. The advantage of using a templet that can be taken off is obvious. If all the material to be punched from any one templet is not at hand or if only a few pieces are wanted, the machine can be changed often, the time lost is small, and the same spacing is resumed at subsequent settings, conditions not possible where stops are used.

The spacing carriage locks automatically at each peg on the templet. This is beyond the control of the operator and no error can occur from stopping at the wrong place or from the carriage rebounding or skewing. The carriage is held securely at the stopping points by pawls engaging a hard steel rack running the full length of the table, on each side. Six or eight pawls are used, and these are staggered in such a way that the greatest pos-

sible errors cannot exceed 1-32 or 3-64 in. The pawls are located on each side of the carriage and one engages on each side at every stopping point, thus keeping the carriage always square and also providing a positive and absolute stop, which operates automatically.

The larger type machines for handling heavy material are built on the same lines, except that a motor is provided for operating the spacing carriage, the forward motion being controlled directly by the operator through a clutch.

It will be noticed that on this machine angles are handled with the leg up. This is a decided advantage wherever possible, for by providing skids of the same hight as the rollers on the spacer, the material can be skidded on and off, avoiding the use of an overhead crane and such delays as it might entail. In punching with the leg down, necessitating the use of double rollers, this is not possible, and a crane must be used for lifting the work on and off. Another advantage occurs in punching heavy angles where holes are spaced close together and curving of the material cannot be avoided; the flat rollers allow free passage, where the double rollers would quickly bind. Usually such angles can be spaced and curving avoided by punching the angles in pairs, back to back, on a multiple punch, and providing proper means for gauging at the punch. This is the only way to accurately punch such pieces.

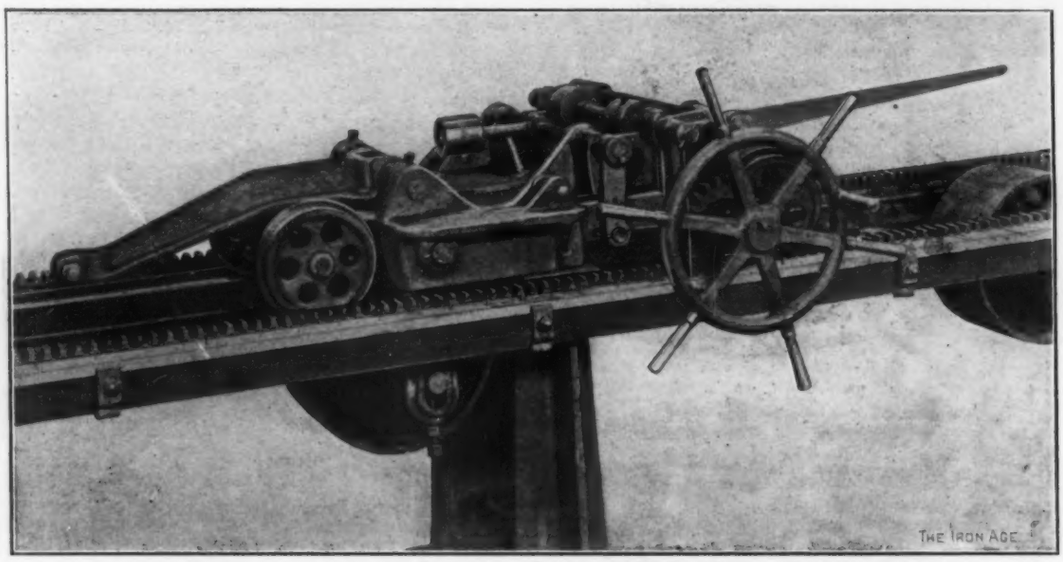


Fig. 2.—Detail of the Carriage on the Thomas Improved Spacing Machine.

The jaws securing the material to the carriage are pivoted to permit free and easy stripping of the material and avoid lifting of the carriage. This arrangement is modified to suit the material handled. On spacers for handling plates, clamps bolted to a thin plate secured to the carriage are provided. This arrangement, while providing a secure grip on the material, provides a flexible connection to the carriage for easing the stripping. The rollers, as shown in the engravings, are also subject to variations to suit the conditions. These are turned and mounted on cold rolled shafts, and vertical adjustment to the hight of the dies is obtained by set screws.

A spacing table is the only means of obtaining accurate punching on a large class of work. Material such as plates or angles, where the holes are very close together and where the material is comparatively thick, will stretch in punching, and this stretching, which is accumulative with every hole punched, amounts to considerable on long material. In punching by centers this cannot possibly be avoided. A spacing table compensates for it, however, the stretching of the material merely resulting in a slightly increased length that may be trimmed after punching.

All automatic spacers have limitations. Plates, particularly cover plates, having waves or kinks cannot be accurately spaced, as the machine will measure spaces in a straight line, and if a wavy plate is punched it will be found that the holes in the end are out when the plate is flattened out. This can also occur in punching by centers if the marker is not careful to follow the waves in placing the templet for marking.

The Stove Founders' National Defense Association.

The twenty-second annual meeting of the Stove Founders' National Defense Association was held in the Hotel Astor, New York, on May 7. A high compliment was paid to President McAfee for the success of his administration. During the year 120 matters had been brought up for adjustment, with but three strikes, and those of minor importance and due to occurrences only indirectly within the field of the association. A unanimous vote of thanks was given the retiring president. An equally complimentary tribute was paid to Abram C. Mott, who had served the association as treasurer for 22 years, and who has earned retirement. The following officers were elected:

President, W. H. Cribben, Chicago; first vice-president, Fred. Will, Rochester, N. Y.; second vice-president, M. B. McKnight, Reading, Pa.; treasurer, Lewis Moore, Joliet, Ill.; secretary, Thomas J. Hogan, Chicago; Conference Committee: W. H. Cribben, Chicago; E. W. Peck, Rochester; Abram C. Mott, Philadelphia; J. W. Emery, Quincy, Ill.; S. R. Baldwin, Pittsburgh; A. W. Walker, Boston.

The district committees appointed are as follows:

First District: E. W. Anthony, Boston; O. G. Thomas, Taunton; A. W. Walker, Boston; W. E. Walker, Boston.

Second District: E. W. Peck, Rochester, N. Y.; C. Snyder, Columbia, Pa.; J. A. Lansing, Scranton, Pa.; R. G. Rennolds, Richmond, Va.; H. T. Richardson, New York City.

Third District: Stanhope Boal, Piqua, Ohio; George H. Barbour, Detroit; W. A. Dwyer, Detroit; S. Kahn, Hamilton, Ohio; H. J. Karjes, Evansville, Ind.

Fourth District: R. S. Buck, St. Louis; N. H. Burt, Leavenworth, Kan.; H. A. Viets, Milwaukee, Wis.; C. H. Castle, Quincy, Ill.; Fred Sattler, Belleville, Ill.

The Sheffield Rolling Mill Company, Sheffield, Ala., has filed a first mortgage to the Union & Planters' Bank & Trust Company of Memphis, Tenn., to secure an issue of $100,000 6 per cent. gold bonds, maturing 1912-1927. The capital stock of the company is $200,000, and its annual capacity is 30,000 tons of bars, bands, hoops, cotton ties and spikes. Robert C. Johnston is president and Thomas F. Johnston secretary and treasurer.

The Renewal of the German Steel Syndicate.

BERLIN, May 2, 1907.—The renewal of the Steel Association is now an accomplished fact. Negotiations have been in progress for above a year, and down to the very last day before the expiration of the old contract the question of prolongation hung in the balance. The chief difficulty was the readjustment of allotments in a manner satisfactory to the numerous works which had recently increased their producing capacity. A number of these put in claims for much larger allotments, and so serious was the wrangle over these claims that the outlook seemed several days ago to be extremely black, and it was actually reported that negotiations had been finally broken off. Literally at the eleventh hour, however, a way was found by which to satisfy the jarring elements. Some of the large mills in Lorraine and on the Saar were the chief obstacles to an agreement; but they finally moderated their demand to some extent and a compromise was adopted. A similar compromise had been made several weeks ago with the Westfälische Stahlwerke. This concern had demanded an allotment of 230,000 tons of steel. The association was at first willing to concede only 120,000 tons. Finally, however, it raised this to 160,000 tons, with yearly additions of 5000 tons for the next two years.

Allotments Over 12,000,000 Tons.

When the association was organized in 1904 the total allotments amounted to 7,472,000 tons of crude steel. By gradual accession of new members the allotments rose to 11,079,000 tons at the beginning of this year. The new allotments increase that figure by nearly 1,000,000 tons, amounting to 12,040,000 tons. In view of this large volume, being nearly as great as Germany's entire production of pig iron last year, it is feared in some quarters that the association will have to struggle with overproduction within a few years, after the present boom has spent its force. The association itself foresaw this same danger and struggled strenuously against a too great enlargement of allotments.

The new association was prolonged to June 30, 1912. Its membership is 37, as compared with 28 when the organization was effected in 1904. That original number, however, had increased to 36 by the beginning of 1907. There is only one new member, the Westfälische Eisenwerke. The Upper-Silesian branch of the association failed to effect its reorganization, but all the members are individually in the new association.

The International Rail Pool Renewed.

The first task of the association now will be to hurry through the reorganization of various minor trade combinations dependent upon it. When these have been prolonged much activity in ordering iron and steel products is looked for. The International Steel Rail Pool, whose renewal was awaiting the perfection of the association in its new form, took effect yesterday for a new lease of life.

The association yesterday declared contracts open in commercial forms of steel for the September quarter at unchanged prices. The state of suspense in which the iron trade has lived for above a month will now give place to animation, and orders will be sent in briskly. The renewal of the association gives great satisfaction in the trade and on the stock exchanges, where an upward spurt in iron shares occurred yesterday. The prolongation is believed to mean the continuance of the boom in undiminished force.

The Pig Iron Trade.

Notwithstanding the fact that a quieter tone has prevailed in the iron trade, there has been no slackening up in the rate of production. The make of pig iron in March (April figures are not yet available) was the greatest ever recorded, being 1,099,257 tons, as compared with 1,058,527 in March, 1906. For the first quarter of the year the production was 3,169,600 tons, a gain of 126,600 tons over 1906.

Pig iron for export has latterly been in very active demand. American buyers are in the market with good orders, but not a few of these have been rejected, owing to the inability of furnaces to take new orders for nearby delivery. Canada is also trying to buy German iron, and Japan has recently given some orders for remoter delivery. Furnaces have too much old business, now badly behind hand, to care much for new engagements immediately. The continued strength of pig iron is reflected in the fact that dealers who handle the Luxemburg-Lorraine product have recently marked up prices.

For the first quarter of the year German imports of all forms of iron amounted to 145,900 tons, being an increase of 46,000 tons. On the other hand, exports were 820,480 tons, or about 129,000 tons less than for the like quarter of 1906. These figures, taken in connection with the production figures already quoted, show that the consumption of the country for the quarter was fully 300,000 tons greater than last year.

The Machinery Trade Active.

A report on the state of business in German machinery shops states that these are still enjoying a brisk business. Many shops, particularly those turning out special articles, are compelled to stipulate for very long periods of delivery, and in many cases orders are rejected because of the crowded state of the shops and their inability to fill them in the required time. This is especially true with the manufacturers of textile machinery. Machine tool builders are also fully satisfied with business, and the active run of new orders affords no ground for fearing that a collapse of the boom is near. Locomotive and engine builders are equally well satisfied with the situation. Makers of machinery for the building and construction trades, on the other hand, report a considerable falling off of new orders. Export business is reported to be satisfactory, except that American competition is felt sharply in outside markets; English competition in steam boilers is also mentioned. Foreign countries, too, are taking good shipments of small and medium sized gas engines. The outlook for big gas engines in the home market is good and prices are better than last year.

The Hoesch Eisen und Stahlwerk of Dortmund is about to absorb the Hohenlimburger Fabrik und Hüttenverein, which last year produced 42,000 tons of steel.

Carbonic Acid and Iron Rust.—The *Proceedings* of the Chemical Society (Great Britain) for March 21, 1907, record an experiment by Dr. G. T. Moody in support of his original contention that the presence of carbonic acid is essential to the ordinary rusting of iron. It was the aim of the experiment to demonstrate that when iron is in contact with water, which is allowed to absorb carbon dioxide and oxygen from the air, the metal first dissolves to form ferrous bicarbonate, and is then subsequently oxidized and precipitated as hydrated ferric oxide (iron rust). If the iron is in the form of nails standing vertically with heads uppermost in a vessel of water, the rust collects only on the heads of the nails, and if these are covered by a piece of hardened filter paper, which allows of diffusion, then the rust settles on the upper surface of the paper. The other parts of the nails remain bright and there is no general corrosion of the surfaces of the metal. It is evident from this experiment that the metal first dissolves in the water, and that the oxidation occurs in the upper layers of the ferrous bicarbonate solution, so that the precipitated hydroxide slowly settles on any underlying surface.

Electrolytic Pickling.—A paper on the "Electrolytic Pickling of Steel," read by C. J. Reed of the Hercules Metal Company before the annual meeting of the American Electro Chemical Society at Philadelphia, May 2-4, dealt with the removal of scale from iron and steel, where the iron becomes the cathode of an electrolytic process. It was stated that with an acid solution at 60 degrees C. and a specific gravity of 1.75, and with a current density of 1.4 amperes per square inch for the cathode, the hardest scale is removed in three minutes. The method is especially applicable to steel wire where the manufacturers pass the wire lengthwise through the solution. Many firms object to this and prefer to immerse in coils, but the latter method prevents a uniform current density.

The Pawling & Harnischfeger Renewal Bulletins.

A System for Facilitating the Ordering of Repairs or Renewals for Cranes.

There are few extensive users of machinery, and certainly no manufacturers, who have not at one time or another experienced the annoyance of misunderstandings in connection with orders for parts of machinery. Nearly always when a repair is needed it is wanted in the quick-

CRANE	DATE	BULLETINS	RENEWAL SHEETS

Fig. 1.—Card for Crane Builder's Record. (Actual Size, 3 x 5 In.)

est possible time. Appreciating this fact manufacturers as a rule keep parts that are subject to wear or breakage in stock, so that they may be supplied quickly, and this more than anything else has made the standardization of parts to an interchangeable basis a prevalent practice. Such extensive attention to meeting the needs of patrons is most commendable, but unfortunately the scheme is very often crippled because of difficulty in making orders specific. A rush repair is usually ordered by telegraph,

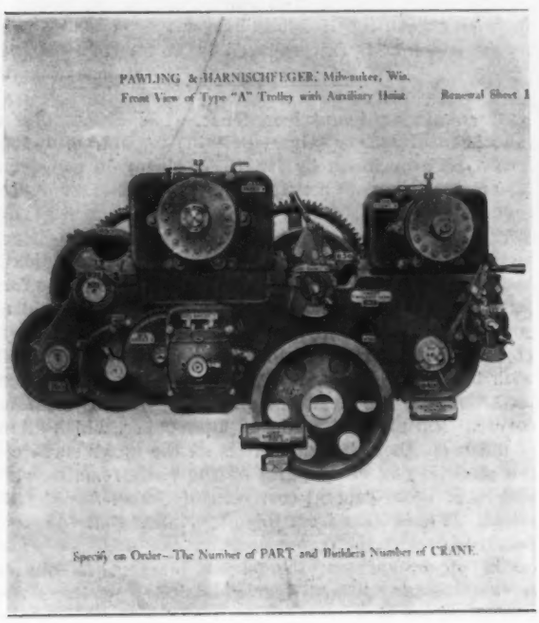


Fig. 2.—Renewal Sheet 1.—Front View of Type A Trolley with Auxiliary Hoist.

and a wordy description of the part wanted is expensive and likely to be transmitted with an error that perhaps causes the wrong part to be sent, or at least entails more communicating.

Pawling & Harnischfeger, Milwaukee, Wis., are engaged in a line of which this is especially true, and have recently fortified their system of attending to repair and renewal business in a way that is almost mistake proof. It consists in brief of the use of bulletins illustrating in assembled and detailed views all the parts of an equipment, these parts being individually numbered and no number used twice, so that a part is completely specified when ordered by that number alone. The advantage is obvious, for it is much simpler to wire "Ship at once part 1015, crane 9481," than to attempt to describe that part, which, if it be a gear, for example, requires a statement covering its material, diameter, width of face, number of teeth, pitch, hole in the center, &c., and there is always a chance of the sender or telegraph operator making a mistake in one of the dimensions that will confuse the builder and oblige him to waste time in wiring for further particulars or directions, or else guess at the right dimension, and possibly fill the order with the wrong part.

The principles of the system will be understood from a description as it applies to one of the company's standard equipments, in this case a type A trolley with auxiliary hoist. In similar manner there are bulletins for all of the company's standard machines. When a crane or hoist is shipped, the purchaser is provided with a set of loose leaves bound in a cover, containing all sheets pertaining to that particular crane or hoist. No two sheets are numbered alike, and no two parts, so there is no necessity of distinguishing by other explanations.

The number of the crane is always requested. This

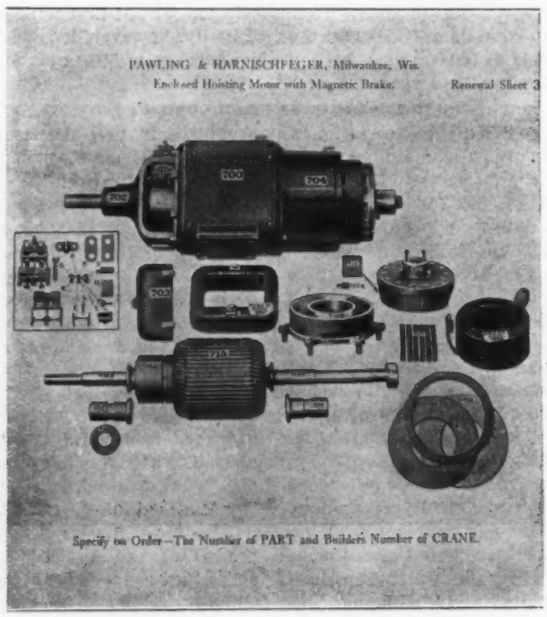


Fig. 3.—Renewal Sheet 3.—Inclosed Hoisting Motor with Magnetic Brake.

shows at once if a mistake has been made in the transmission of numbers, if the number proves to be one not identified with that particular crane, as indicated by the records kept in the office. At the time the crane is sent out the builder fills out a card of the form shown in Fig. 1, giving the name and address of the purchaser, the number of the crane, the date when it was shipped and the bulletins and renewal sheets that went with it. This is a tally which is referred to in connection with any subsequent business with that crane user, pertaining to the crane in question.

As a rule the series of sheets begins with at least two views of the assembled machine. In the case under consideration, it includes a front and top view of the type A trolley with auxiliary hoist. As may be seen from Fig. 2,* the front view, all of the exposed parts have their own number plainly visible, and where a part is made up of other parts reference is made to another sheet in which those parts are shown both assembled and unassembled. For instance, in Fig. 2, it will be seen that on the motors there is a reference, "See sheet 3." This sheet, reproduced in Fig. 3, shows the motor from the side instead of from the end, and all of its interior parts by themselves. If a repair is needed for some part of the hoisting motor or magnetic brake it is found

* Figs. 2, 3 and 4 are not reproductions of the entire sheets, the blank margins at the sides having been cut off for convenience. The actual size of the sheets is 7¾ x 10¼ in.

on this sheet. Similarly, if it is a part of the trolley drive motor and bracket that is to be renewed, that part is found on renewal sheet 7, as indicated on the front view of the trolley, or, if it is a part of the bridge motor (not of course shown in the views of the trolley), it will be found on renewal sheet 15, where the motor is shown both assembled and with the parts spread out separately. In like manner the scheme applies to the parts of the main pinion bracket and girt bracket, the drum type load brake, the B cone type load brake, the 9-in. trolley drive motor and bracket head, the trolley driving mechanism,

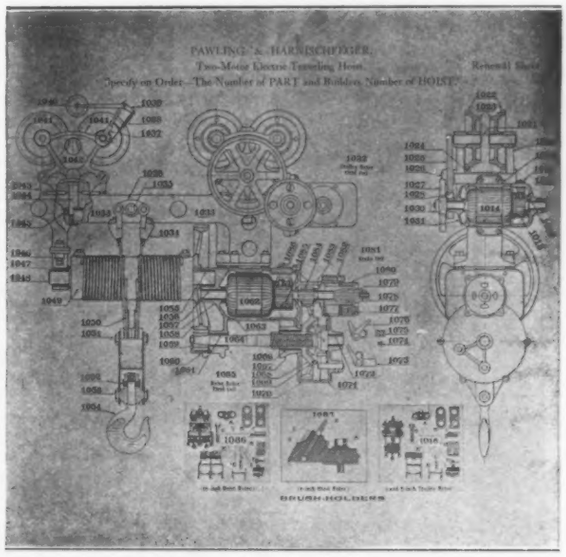


Fig. 4.—Renewal Sheet 22.—Two-Motor Electric Traveling Hoist.

the limit switch, auxiliary hoist limit switch and collectors for the trolley and line wires.

The location of the new part needed and the finding of its number is simple. It involves only a search of the first and second sheets to start with, and if the number is not found at once on those sheets there will be found a reference to the sheet on which the number of that part will be found. In all the sheets as a whole, each part will be found in at least two different positions, so that there is no danger of mistake in identifying any part. The system is simplicity itself, and is its own recommendation, for it means the almost certain avoidance of errors and misunderstandings that often result in the wasting of time, money and patience.

Another system used by the same company, which, if anything, is a little simpler, is that applying to the two-motor electric traveling hoist, which is covered in two sheets, one of them marked renewal sheet No. 22 and illustrated herewith as Fig. 4. In this case it was possible to number all of the parts on one sheet, and on the facing page these parts are named in numerical order. The names are for the convenience of the user, and guard against the mistake of sending the wrong number where one or more numbers appear closely together. For the builder, however, the name is of no consequence, as he needs only the number to identify any single part in the equipment.

It will be noticed on the bottom of renewal sheet No. 22 that the brush holders are shown in individual views where the parts are unassembled. In this case letters are used to follow the reference numbers, 1086 G, for example, indicating that the part desired is a bolt for the brush holder on the hoist motor, while 1018 G would be the same for the trolley motor. The reverse side of the sheet shown in Fig. 4 carries an illustration of the two-motor electric traveling hoist taken from a photograph, and the reverse side of the sheet carrying the list of parts contains a view of the Pawling & Harnischfeger plant at Milwaukee. A similar view is usually made the fly leaf in a set of the bulletins, adding to the general attractiveness of the booklet, which is bound in heavy paper.

The Buffalo No. 5 Portable Punch and Shear.

In the building of its line of portable punches and shears the Buffalo Forge Company, Buffalo, N. Y., for some time has employed armor plate instead of cast iron, on account of its greater tensile strength for the same weight. A single sheet of armor plate forms the main frame, where ordinarily a cast iron body is common in machines of their type, and the result is a marked saving in weight. The illustration shows a No. 5 portable punch and shear as made by this company, which has been recently modified in design and increased in capacity, making it, the company claims, the most powerful portable hand tool of its kind. Directly below the die the armor plate is strengthened by an additional strip securely bolted on either side, giving increased strength under the punch where the crushing or buckling is most likely to occur. The working parts are machined drop forgings, carefully fitted to the bearing pins to allow no lost motion, and afford great strength. There is no cast iron to break in any part of the machine.

The punch will cut holes up to ¾ in. in ½-in. plate, punches and dies being furnished for ⅜, ½, ⅝ and ¾ in. sizes. The shear blades cut stock of dimensions up to 6 x ⅝ in. with one easily delivered stroke. An aligning device attached on the lower shear blade, about 2 in. away from it, gives support to the bar being cut, preventing bending and insuring a cut at right angles with no ragged edges. Another new feature is the bar cutter, which cuts steel of any diameter up to 1 in. The cutting dies are located, as will be noticed, one in one of the long levers reaching to the link connected to the lever socket; the other is in the main body plate of the machine and

The No. 5, an Improved Portable Punch and Shear Built by the Buffalo Forge Company.

holds the bar in position, so that a square, true cut is obtained. All working parts are hung on double bearings —that is, all of the connecting links and levers are duplicates, each transmitting one-half the power. This double bearing arrangement eliminates sidewise wrenching strains, which might be injurious when the machine is used to its full capacity.

The depth of the throat at the punch and die is 7 in., and the hight of the machine over all is 58 in. The machine is mounted on wheels, so that it may readily be drawn from place to place, or, when desired, it will be furnished without the truck, so that it may be set on a permanent foundation. The weight of the machine with the truck as shown is 850 lb.; the weight without the truck is 725 lb. The wide range of sizes and forms

of work that may be handled by this machine and which ordinarily would require two machines, makes it a particularly convenient tool.

A Novel Scrap Handling Equipment.

The problem of handling assorted scrap economically and expeditiously has been solved in a rather clever way at the scrap yard of Daniel & Miller in Greensburg, Pa., where the conditions are somewhat peculiar. The latter will be best understood by referring to the plan, Fig. 1, which shows the location of the buildings, car tracks, &c. The yard is located on the main line of the Pennsylvania Railroad at the west end of the town and occupies about 10 acres of ground. The scrap consists largely of old boilers and other unwieldy junk, as well as odds and ends of a smaller nature. It is brought in on a siding from the Pennsylvania Railroad which is depressed, so that the top of the car is approximately level with the ground. This arrangement was expected to have permitted the unloading of heavy material by hand, but in practice it was found that with deep steel gondola and other loaded cars such as occasionally came in, the depression of the track did not meet the various requirements. The need of some means of lowering the cost of handling the scrap and ability to handle heavier material than was formerly possible was finally satisfactorily met by installing a derrick operated by a steam hoisting engine. This equipment was furnished by the Carlin Machinery & Supply Company, Allegheny, Pa.

The derrick is located so that it will swing clear across the siding and take the sheared material from the cars, using a box or boiler head for piling the small stuff on, and in addition to unloading, the derrick is used to operate a drop for breaking scrap and for reloading wrought or steel scrap after it has been sheared in an adjacent building. The derrick will take loads aggregating 5 or 6 tons, and is a guy derrick, so that it can swing through a full circle and back again the same way, covering two cars for loading and unloading. It will be noticed from Fig. 1 that the derrick reaches over the end of the L-shaped open shed, making it possible to load the sheared material from this point directly to the cars. This shed contains a Carlin shear and a small clipping shear, both being driven by a 20-hp. Westinghouse motor operated by current furnished from the local street railroad company. The large shear is capable of cutting 2 in. and larger square iron, and the clipping shear is intended for small material.

The self-contained hoisting set, comprising boiler, engine and drums, is illustrated in Fig. 2. The hoisting

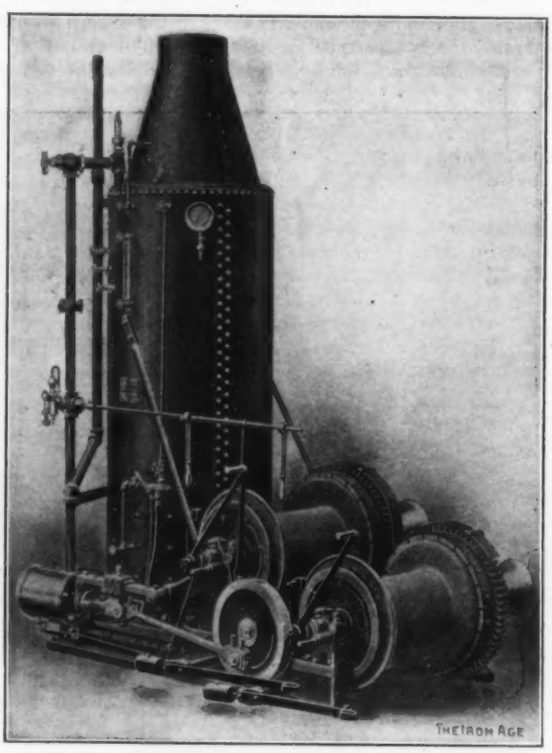


Fig. 2.—The Carlin Hoist Which Operates the Derrick.

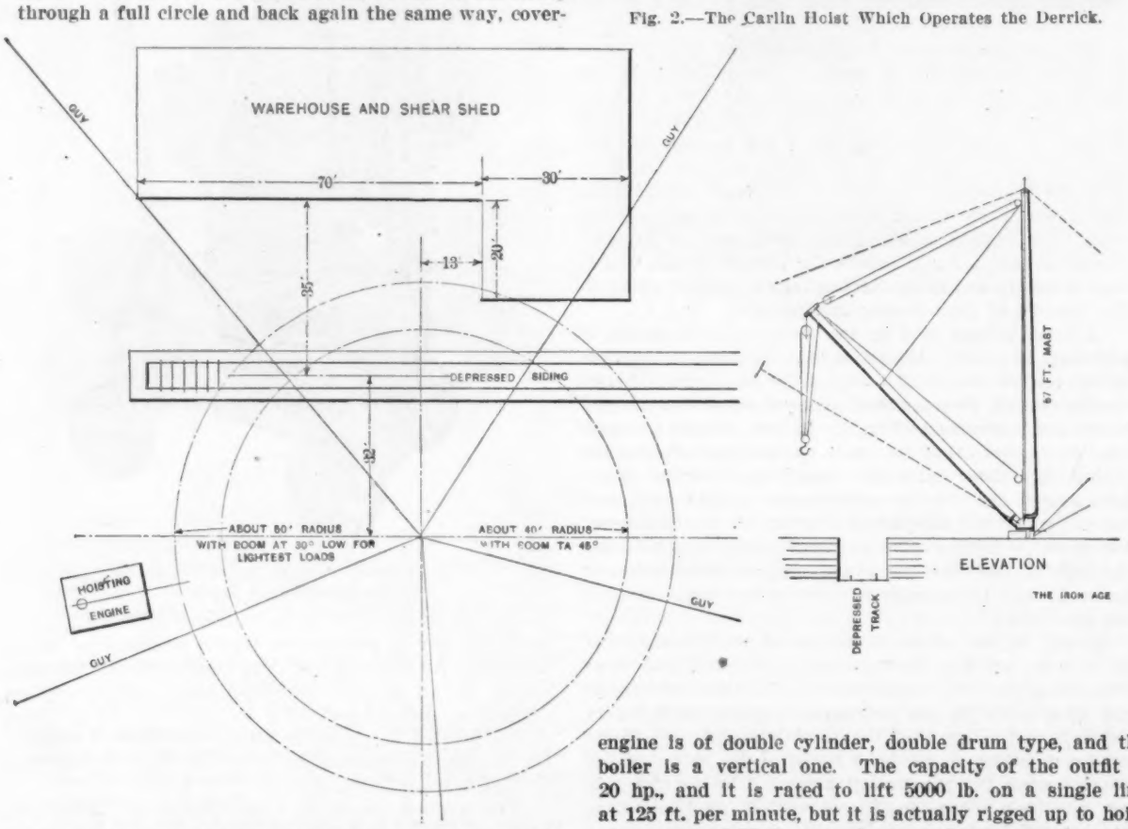


Fig. 1.—Plan and Elevation Showing the Derrick for Handling Scrap in Daniel & Miller's Yard, Greensburg, Pa.

engine is of double cylinder, double drum type, and the boiler is a vertical one. The capacity of the outfit is 20 hp., and it is rated to lift 5000 lb. on a single line at 125 ft. per minute, but it is actually rigged up to hoist at a speed of 50 ft. per minute, and consequently raises a correspondingly heavier load. The hoisting engine boiler will be used for furnishing steam in cold weather for heating the offices located in the warehouse. It is the intention to place the hoisting engine at the end of the siding, so that the spools on the engine can be used for moving cars on the siding either in or out by means of a rope and a snatch block.

The Dudgeon Hydraulic Testing Pump.

There are many purposes for which a small portable hand power hydraulic pump capable of exerting great pressure would be serviceable. Among the more important are the testing of boilers, high pressure mains and tanks, &c., to discover leaks, while aside from testing purposes there are other useful applications of such a pump as a means of operating a tool, lifting a weight or exerting a great pressure through a hydraulic cylinder. In such a pump the main requirement is capacity for producing high pressure, and not capacity in volume delivered. It is assumed that the containing space to be tested will be filled in any convenient manner, and liquids being incompressible the addition of a very small quantity by means of the pump will give the testing pressure. It was natural that the firm of Richard Dudgeon, New York City, should recognize in its new form of hydraulic jack (described in these columns January 3, 1907), the means at hand for manufacturing a hydraulic testing pump by very slight modifications in the design employed in the jack. A comparison of the engravings herewith with those illustrating the jack in the issue of *The Iron Age* previously mentioned will show the similarity in principle.

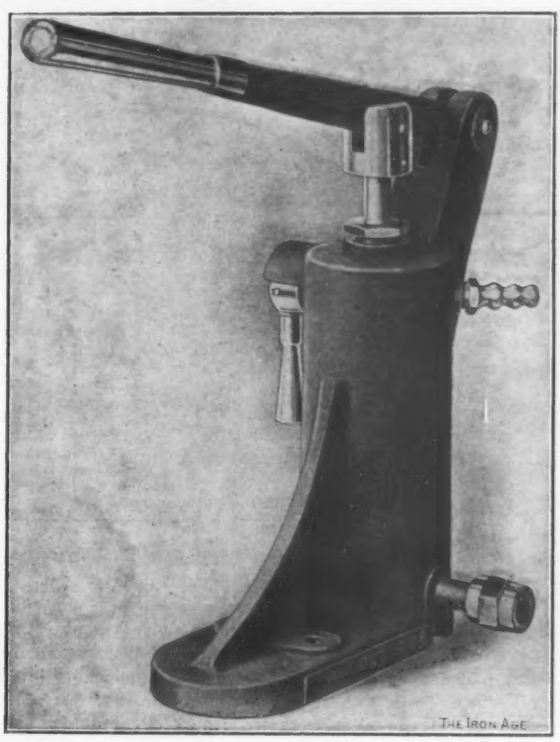


Fig. 1.—The Portable Hand Power Hydraulic Pump Built by Richard Dudgeon, New York.

The pump, a general exterior view of which is given in Fig. 1, is remarkable for the power it affords in so small a compass. The pump stands 12½ in. high over all; the outside diameter of the barrel is 3½ in., the length of the operating handle is 16½ in. and it weighs only 31 lb., making it readily portable in a mechanic's or engineer's kit. Fig. 2, a section of the pump, shows the construction, and will be of service in understanding the principle of operation.

The pump is designed for working pressures up to 1500 lb., although it is actually capable of much higher pressures. The testing pump, like the pump in the jack, is a compound one, having two pistons, the larger one being double the area of the smaller one, so that for the same pressure exerted on the operating lever two pressures may be obtained. The volume of discharge in each case is, of course, in inverse proportion to the delivered pressure. In using the pump for the first few strokes to fill the void in the vessel or system under test the lower pressure is desired; then a change in the valve control gives the higher pressure for the final testing.

The pump draws its supply of liquid through a rubber hose attached to the nipple at the upper right hand side of the barrel, as seen in Fig. 2, the other end of the hose being allowed to dip into a pail or other receptacle of water or whatever liquid may be employed. The discharge is from the outlet at the lower end of the same side of the barrel, where a union is provided to make a tight joint with the pipe leading to the apparatus under test. During the upstroke of the plunger the liquid is drawn by suction into the chamber *a* at the top of the barrel, and passes around the valves *b* and *c* to the lower sides of the two pistons *d* and *e*. On the downstroke the valve *b* is forced to its seat, and the discharge takes place through the passages *g* and *h*, around the valves *c* and *i* to the discharge outlet. This is the condition when the lower pressure is obtained, and at such times

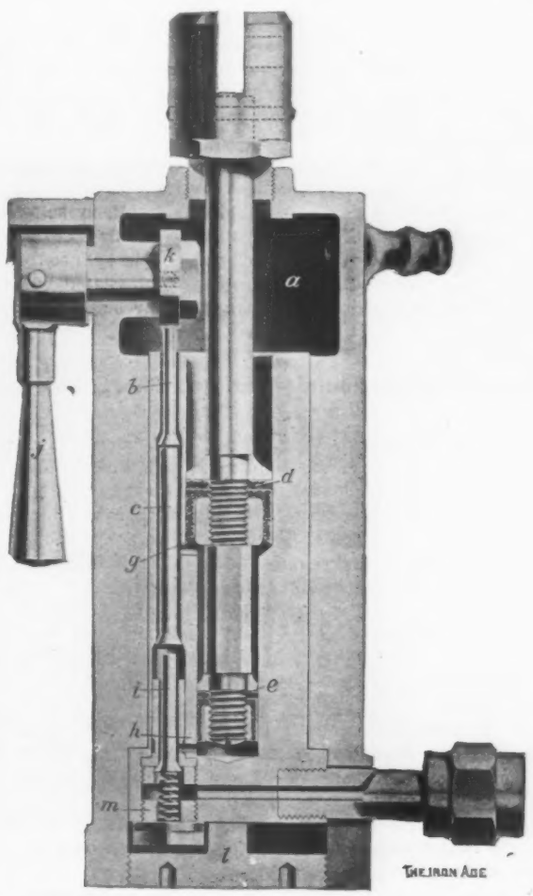


Fig. 2.—Vertical Section of the Dudgeon Hydraulic Testing Pump.

the valve controlling handle *j* is swung to a position at right angles to that indicated.

The handle *j* is connected with a shaft carrying the cam *k*, which when the handle is in the vertical position, as shown in Fig. 2, forces the valve *b* from its seat. Under such conditions the upstroke of the plunger produces the same effect as before, but on the downstroke the discharge which takes place from the lower side of the upper piston *d* simply returns to the suction chamber, the upper valve *b* at this time being idle, the middle valve *c* the suction valve, while the lower valve *i* is the discharge valve. All of the pressure exerted is then produced by the lower piston *e*, the course of the liquid being as before around the valve *i*, and out through the discharge outlet. When the valve handle *j* is revolved to the other horizontal extreme of its movement all the valves are forced from their seats so that the liquid is admitted back through the discharge, relieving the pressure.

It will be seen, then, that in the case when both pistons are in action the middle valve *c* remains open and is idle, the valve *b* being the suction valve and the valve *i* the discharge valve. In the second case the valve *b* is the idle valve, *c* becomes the suction valve and *i* re-

mains the discharge valve as before. The pump, like the new Dudgeon hydraulic jack, is notable for the simplicity of its valve arrangement, there being only these three valves, which are all in one passage, therefore communication between the discharge and inlet at times when the pump is at rest is blocked by three valves in tandem, making it practically impossible for leakage back to the supply chamber. These three valves serve all purposes of suction, discharge and relief, there being no need of an extra valve to relieve the pressure, which would necessitate a passage between the discharge and inlet protected by only one valve.

The accessibility of the interior parts is a feature of importance and interest. The valves and cylinders may be removed as a unit by unscrewing the plate *l* at the bottom of the jack, and the plunger and pistons may be withdrawn intact by unscrewing the gland at the top under the head to which the operating lever connects. The packing of either piston may be removed by unscrewing the parts, which are separable. All three of the valves are reached by unscrewing the plug *m*, at the bottom of the valve packing. The cam *k* is reversible, so that if one side becomes worn it can be inverted and the opposite side used.

The parts are few, and there is nothing delicate in the construction, so that almost no care or attention is required in the use of the pump. It is entirely self-contained, and in this respect is probably the first device of its kind that has ever been offered. It is believed that there is a wide field for such a pump, and that it will be found useful in more ways than even the builder anticipates.

New England Foundrymen and Short Weights.

At the monthly meeting of the New England Foundrymen's Association at the Exchange Club, Boston, May 8, the committee appointed to investigate the matter of short weights on shipments of pig iron, coal and coke reported that a circular letter outlining the purposes of the committee had been mailed to all the foundries in New England, and the responses already received showed much interest in the question. A majority complained, according to the committee, of receiving short weights continually, and agreed that some method should be adopted of adjusting the matter for the protection of the consumer.

The secretary announced the death of A. F. Nichols, Lowell, and President William H. Bense appointed as a committee to prepare resolutions Frank Pevey, James Pevey and William Doherty, all of Lowell.

The Nichols Foundry Company, Lowell, and the Machine Sales Company, New York, and Peabody, Mass., were elected to membership.

President Bense called the attention of the members to the convention of the American Foundrymen's Association, to be held at Philadelphia, May 21 to 24, and urged them to be present. He told of the elaborate plans made for working exhibits of foundry equipment and of the attractive series of papers on the programme.

After dinner James Wood Pogue of the Sheldon School of Salesmanship, Boston, gave an instructive talk on "The Science of Business Building."

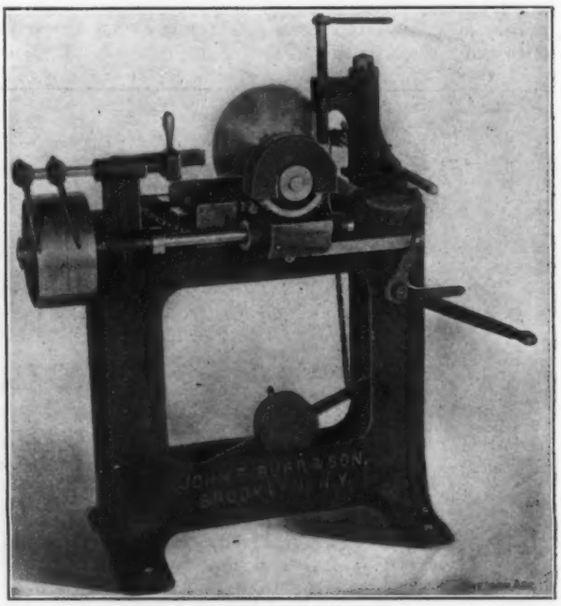
The Smooth-On Instruction Book.—The Smooth-On Mfg. Company, 572-574 Communipaw avenue, Jersey City, N. J., manufacturer of iron cements, has issued the second edition of its No. 5 instruction book. This publication describes a number of the many ways in which the various Smooth-On specialties have been used and the satisfactory results obtained. The book is intended for free distribution, and will be found especially interesting by users of steam, but its pages give useful points to manufacturers generally.

The downtown offices of the Westinghouse Electric & Mfg. Company have been removed from the Westinghouse Building to the Union Bank Building, Fourth avenue and Wood street, Pittsburgh, the company having taken the entire eighteenth floor in this building.

An Improved Burr Cold Saw.

A machine offered as something more rapid and accurate than a power hack saw, for cutting off stock with smooth, straight, parallel ends, is the improved No. 1 cold saw, built by John T. Burr & Son, Brooklyn, N. Y., and illustrated herewith. All kinds of metal stock may be cut, including rounds, flats, squares and other shapes of solid stock, not over 3 x 3½ in. in cross section, as well as pipe, &c. The machine uses a blade 10 in. in diameter by 3-32 in. thick and will cut off blanks with a deviation from absolute parallelism of within 0.005 in.

The saw blade runs in a bath of lubricant at about 40 ft. per minute peripheral speed. A blade will usually last for months of steady cutting and may be ground when necessary on a bench grinder furnished with the machine. Grinding is required about once a week where the tool is used quite steadily, and is accomplished in about 20 min. The feed is by gravity, through a weight and lever, the lever and carriage being connected by a



The Improved No. 1 Cold Saw Built by John T. Burr & Son, Brooklyn, N. Y.

chain running over an idler sheave. The weight is adjustable on the lever for increasing or decreasing the feed. The gravity feed is particularly desirable on a machine of this size, as it will keep the saw up to its work at all times, even though the blade may be considerably out of round.

The driving mechanism is substantial, the blade being driven through a train consisting of steel pinions, a worm wheel and a steel worm provided with a ball thrust bearing, and operating on a splined shaft. The tight and loose pulleys are 7½ in. in diameter and should run at about 500 rev. per min. An automatic trip stops the machine by shifting the belt to the loose pulley after a cut has been completed, preventing buckled saw blades. This trip is actuated by a coiled spring, which is compressed while the belt is on the tight pulley and is released when the carriage reaches its extreme position. A stock stop is also provided, so that any number of pieces may be cut off exactly the same length. The machine occupies a floor space of about 24 x 36 in. and weighs 425 lb.

The Supreme Court of Pennsylvania in April handed down a decision in favor of the Chaplin-Fulton Mfg. Company, Pittsburgh, in the suit brought by Robert G. McAuley, Pittsburgh, claiming royalties on the Vigilant feed water regulator manufactured by the former company. The suit had been decided in favor of the Chaplin-Fulton Company by the lower court and was appealed to the Supreme Court. The case has been dismissed at the cost of the plaintiff.

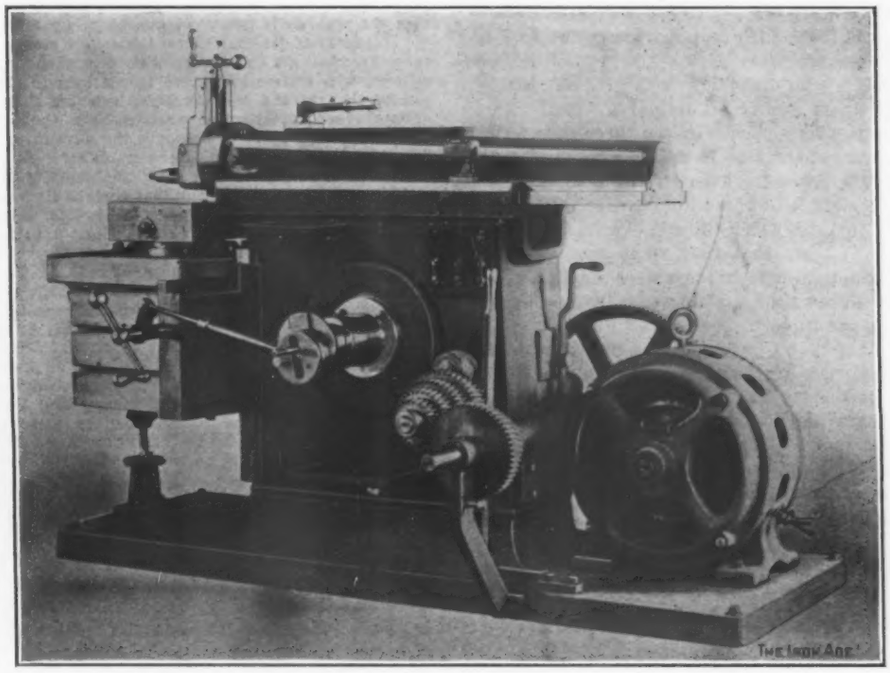
Harbison-Walker Firebrick Contracts.

The Harbison-Walker Refractories Company, Pittsburgh, has secured in the past few months contracts involving millions of silica, clay and quartzite brick for coke oven construction in the Connellsville and adjacent regions. Among these is one for the 200 new ovens of the Connellsville-Central Coke Company now building at Herbert Works, New Salem, Pa. These ovens will be of the modified Belgian type, 32 ft. long and 5 ft. wide. Lime bond silica and clay brick to the number of 1,600,000 will be used. The company will shortly complete its shipments to Grindstone No. 3 Works of the Pittsburgh Coal Company, consisting of 252 ovens, and will then begin on the new 350 oven plant of this company at Grindstone No. 4 at Rows Run. Several million brick will soon go to the new 278 oven plant at Earnest, Indiana County, Pa., for the Jefferson & Clearfield Coal & Iron Company, and for repair construction to the several plants of the affiliated Rochester & Pittsburgh Coal & Iron Company.

The Ellsworth Coal Company of the Lackawanna Steel Company is using Harbison-Walker brick in the 250 ovens and flues it is building at Ellsworth, Pa. The other large contracts are on hand. Nothing could better indicate the growth of the coke industry in the last two seasons than the above.

A Motor Driven Steptoe Shaper.

Power and rigidity are features of the motor driven crank shaper illustrated herewith, on which particular emphasis is laid in the claims of the builder, the John Steptoe Shaper Company, Cincinnati, Ohio. The drive is transmitted by a small pinion on the motor shaft which meshes with a large gear shown at the opposite side of the machine. The motor is of 5-hp. capacity and runs at constant speed. Speed changes are obtained through the four sets of gears on the near side of the machine, which are supported by exceptionally long bearings, to give rigidity and a prolonged life. All the gears run continuously, and the desired set is made instantly active by manipulating the vertical lever shown near the nest of gears. This lever controls means for engaging or releasing the different gears giving the four changes of speed. The lever at the back of the machine is connected with



A 25-In. Back Geared Crank Shaper with Down Feed to the Head, Motor Drive and Speed Box, Built by the John Steptoe Shaper Company, Cincinnati, Ohio.

Republic Iron & Steel Company is erecting 95 additional ovens at Republic, Pa., of this material. The Champion-Connellsville Coke Company is building 40 ovens at Brownsville, Pa., and the Georges Creek Coal & Iron Company, Underwood, W. Va., 25 ovens. The La Belle Iron Works will use these brick in the block of modified beehive ovens it is building at Steubenville, Ohio. Among contracts for Pennsylvania made coke oven brick is one recently completed for the Dawson Fuel Company, Dawson, New Mexico, subsidiary to the Copper Queen Consolidated Mining Company of Pittsburgh. This covered 400 ovens and flues, the brick for which were shipped from the Layton, Pa., plant of the Refractories Company.

In the two years of new construction ending this fall, the Harbison-Walker Company will have shipped the brick from its Pennsylvania Works for close to 5000 ovens, covering the requirements of new ovens for the H. C. Frick Coke Company, Washington Coal & Coke Company, Cascade Coal & Coke Company, Shenango Furnace Company, Hostetter-Connellsville Coke Company, Vinton-Colliery Company, Midland Steel Company, Connellsville Basin Works of the Central Iron & Steel Company, Fayette Coke Company, Century Coke Company and a number of others. From its works in Ohio and Kentucky, in the vicinity of Portsmouth, a very large number of ovens have been shipped to the southern West Virginia and Wise County fields, and at present several

back gearing which doubles the number of speed changes, making eight in all available with each length of stroke. In the illustration the cover which normally incloses the speed box is omitted.

The power downfeed with which this machine is equipped is operated by a simple mechanism consisting of a long rod sliding through a friction box, a rockshaft with adjustable limits of oscillation and a ratchet and bevel gearing connected with the downfeed screw. At each reciprocation of the ram the friction box retards the sliding rod sufficiently to oscillate the rockshaft. Alternate oscillations are effective through the ratchet in rotating the feed screw.

A support for the table is provided, having a roller at the top, which bears against a planed surface on the bottom of the table, so that lateral movement of the table is allowed. The support permits exceptionally heavy cuts without springing the table, and insures the accuracy of the work done even under the most severe cutting strains within the capacity of the machine.

These shapers are made in three sizes: 16, 20 and 25 in., either plain or back geared. The engraving shows the 25-in. back geared shaper. The table is 25 in. long, and being equal to the length of stroke affords a support under the entire length of any work which may be assigned to the tool. The machine weighs approximately 4500 lb.

The Machinery and Supply Convention.

Joint and Concurrent Meetings of the National and Southern Dealers' and the American Manufacturers' Associations, Cincinnati, Ohio, May 8, 9 and 10.

After the joint open session on Wednesday, May 8, of the three associations reported by telegraph in the last issue of *The Iron Age*, the real work of the convention began. All the remaining sessions were scheduled to be of an executive nature, but through the courtesy of President Moyer and the members of the American Supply and Machinery Manufacturers' Association representatives of the trade press were granted the privilege of attendance at all of the meetings of the manufacturers and at the sessions at which the three organizations deliberated jointly.

The meetings were all very well attended, and the freedom with which topics were discussed from all sides at the joint sessions proved the wisdom of holding the meetings of the three organizations simultaneously and pointed to great future possibilities of this arrangement. Never before was there such an opportunity for so large a number of manufacturers of machinery and supplies and the merchants who distribute their products to meet and discuss business affairs of mutual interest. Never before had the members of each of the three associations come out to their conventions in such large numbers, to go away so well pleased. There were also a goodly number of men eligible to the different associations who attended here just to "look things over," and things looked so well to them that they went away members of the organization to which they were eligible. This fact accounted for a substantial increase in the membership of each of the three bodies, gained during the convention. The fact that Cincinnati was the scene of the meetings made it very convenient for dealers who handle machine tools to meet a large number of manufacturers in this line whom they represent. The prominent Cincinnati machine tool builders were present at the open session, and their presence at the hotel between sessions made one think at times that the joint meetings included also the National Machine Tool Builders' Association. Secretary P. E. Montanus of the latter organization was present and enjoyed the courtesy of admittance to the manufacturers' meetings.

Harmonious Relations of the Three Bodies.

While the meetings were productive of no definite action along the lines of the adoption of new policies on the injection of new principles into the operation of any of the associations, this fact in itself may be taken as a signal evidence of the harmonious interrelations of the three bodies. Matters affecting the dealer and manufacturer in exactly the opposite manner were discussed dispassionately though forcefully. The advantage of hearing both sides of the story was ever manifest, and instead of either side rushing off and taking action unwisely, both sides agreed to leave the mooted points in the hands of a permanent conference committee consisting of three members of each association.

There were two topics which absorbed most of the attention of the three associations throughout the convention. They were "The Resale Price" and "The Cash Discount." There was much sound argument on both sides of these questions. In the case of the former it was generally conceded that it would not be practicable to sell all lines on the resale price basis at this time. A number of manufacturers have already adopted the resale system and express their satisfaction with it. Others have just taken it up and have not seen it in practical working order sufficiently to determine its ultimate effect on their business. Still other manufacturers must bring up their selling standard considerably before they approve the resale price level. That the dealers are favorably disposed toward its general adoption is evidenced by the fact that they adopted a resolution reaffirming their action at Old Point Comfort last year, urging manufacturers to adopt the resale price system and pledging their support to such manufacturers as do.

Conference Committee's Report on Resale Price.

In addition to this action the report of the Joint Conference Committee, consisting of three members of each association which is printed below, declared for the solution of this problem by the appointment of the permanent Conference Committee referred to above, and recommending that encouragement be given by the members of the two dealers' associations to such manufacturers who have adopted or do adopt the resale price system. The report is as follows:

The Joint Conference Committee of the three associations in conference here assembled have considered the subject of resale price in many of its various aspects, and they are convinced that the problem is one of far-reaching importance.

The sense of the Conference Committee seems to be that the three associations should establish permanent conference committees, who will be instructed to continue to give this subject careful thought and consideration, believing that they will find upon further investigation various lines that may be placed upon the resale basis to not only the advantage of the dealers but also to the advantage of the manufacturers. Your committee, therefore, suggests that after the members of the two dealers' associations have agreed that certain lines be placed upon the resale plan, they should then, if possible, secure the co-operation of the National Hardware Dealers' Association and that the committee then present their wishes to the Manufacturers' Association through their members of the Conference Committee, with the understanding and in full confidence that their requests or suggestions will be received and considered in the most sympathetic and hospitable manner and in the belief that the result will be a solution of each individual problem in a manner entirely satisfactory and equitable to all interests.

Your committee also believes that encouragement should be given by the members of the National and Southern Supply and Machinery Dealers' Associations to these manufacturers, who have already or who in the future may attempt the establishment of resale prices on their goods.

As to the subject of cash discount, no definite action was taken. The Manufacturers' Association referred the matter to its Executive Committee, who will endeavor to discover a method whereby the abuse of the cash discount may be remedied. Other subjects which were brought to the attention of the manufacturers and dealers were "Relation Between the Dealer and the Manufacturer" and "Cost of Doing Business." Able papers on both these topics were read.

WEDNESDAY AFTERNOON SESSION.

The afternoon session on Wednesday of the American Supply and Machinery Manufacturers' Association was devoted almost entirely to routine matters. The address of President Samuel L. Moyer was simply a short talk characteristic of Mr. Moyer's modesty in telling what the association had accomplished. He stated that the chief points of the year's progress would be covered in the report of Secretary-Treasurer F. D. Mitchell, to whom he paid a high tribute for the efficient and painstaking manner in which he administered his office. Secretary Mitchell's report showed a most gratifying state of the treasury and an excellent growth in the membership, which, by the way, increased very materially during the convention, and consequently the figures in the report were obsolete at the time of reading it. The report is in part as follows:

The past year has been signalized by an increase of over 60 per cent. in our membership. While this is gratifying, it is not commensurate with the extent of the interests which should be included in our organization, and we hope that members will use their influence this week to the end that we may enroll many new members at this convention.

The necessity and utility of such an organization as ours are amply demonstrated by the success which has attended our efforts to arrange for this joint convention, at which over 80 per cent. of our members are represented by one or more delegates, and by the cordial spirit with which the two dealers' associations have joined with ours in arranging for the comfort and pleasure of all in attendance at the meeting.

It is also gratifying to report that we have yet to receive any complaints from either of the dealers' associations which might properly be referred to our Advisory Board, appointed to receive grievances and adjust differences on behalf of the members at large.

The report of the Executive Committee was given verbally by S. P. Browning, chairman. He recited the dates and principal proceedings of the meetings of the committee during the year, the chief result accomplished having been the successful combination of the efforts to bring about the joint convention of the three associations.

Under the head of "new business," J. H. Drury of the Union Twist Drill Company suggested that, in the future, papers to be presented at conventions be prepared sufficiently in advance so that they may be submitted to the secretary four weeks prior to the meeting, and that the secretary have them printed and distributed among the members, who will then have an opportunity to prepare their discussions. This suggestion was heartily concurred in, and a motion embodying it was unanimously carried. It was suggested by F. A. Hall of the Yale & Towne Mfg. Company that the dealers' associations be requested to co-operate in this matter, to enable the manufacturers also to prepare themselves for the discussion of papers presented by the dealers.

E. Bertram Pike of the Pike Mfg. Company called attention to the fact that the members might beneficially utilize the secretary-treasurer's office in New York. He spoke of the possibilities to be had in obtaining special information through Secretary-Treasurer Mitchell, making his office a general information bureau for members. He related how hardware manufacturers who are members of the American Hardware Manufacturers' Association, of which Mr. Mitchell is also the secretary-treasurer, are being greatly benefitted along these lines. One instance which he mentioned was where foreign manufacturers send representatives to this country ostensibly to pay friendly visits to American manufacturers, while in reality the purpose of their visit is to learn certain manufacturing secrets. He suggested that when information of this or a similar nature be obtained by a member, he communicate it to the secretary-treasurer, who will in turn disseminate it for the benefit of the entire membership of the association.

An interesting discussion ensued as to the most effective ways and means of increasing the membership of the organization. It was finally decided that this important problem be left to the Executive Committee for solution.

The following were appointed to serve as a Nominating Committee: Chairman, Edward C. Hinman, American Steam Pump Company, Battle Creek, Mich.; John W. Neil, John H. McGowan Company, Cincinnati, Ohio; E. Bertram Pike, Pike Mfg. Company, Pike, N. H.; Willard S. Paden, Northampton Emery Wheel Company, Lancaster, Pa.; F. A. Hall, Yale & Towne Mfg. Company, Stamford, Conn.

THURSDAY MORNING SESSION.

On Thursday morning the first joint session was held, the topic being

Resale Prices.

Four papers were presented on this subject, viewing the question from all sides. First came a paper by George V. Denny of the Georgia Supply Company, Savannah, Ga.:

"Resale Prices," by George V. Denny.

So far as my investigation has gone, and after consulting legal authority, I am led to believe that for a manufacturer to fix the price at which his goods shall be sold by his agents or dealers is in no way a violation of any law, as it is not a combination fixing prices and does not even violate the much talked-of and much abused unwritten law of full and free rights to all men with special privileges to none.

And with these facts before us, in my judgment, there is only one thing to be done, and I believe that each of our associations should do this—that is, clothe our Manufacturs' Committee with the authority to take up this subject with the manufacturers of certain articles and endeavor to persuade them to fix the resale prices on these articles. If these committees can accomplish this in 10 or 20 cases they will have accomplished, in my judgment, a great deal, and if this work is kept up year by year it will only be a question of time when a great majority of the articles in machinery and supplies will be distributed through us upon a profitable basis. Of course, our committees will meet with some discouragement, and it may be necessary for the chairmen of these committees to go directly to the manufacturers for a personal interview in order to show them the advantage of fixing these resale prices; but certainly when there is no violation of the law, written or unwritten, and when the committee can show the manufacturer how profitable several popular lines have become by reason of the manufacturers having fixed a resale price on them, there should be no trouble to convince each and every manufacturer that they can do likewise with profit to all concerned.

RESALE PRICES SHOULD NOT BE MADE TOO LOW.

Another point—it should be brought forcibly to bear upon the manufacturer that they should not fix a resale price that is too low. Some of the supply houses in the Eastern and Northern States can market their goods only covering a territory of something like 200 or 300 miles on a basis of from 4 to 6 per cent., whereas the average supply dealer in the South who covers a territory of something like 1000 miles or more is compelled to market his goods at a cost of 12 to 15 per cent. Therefore, the manufacturer in fixing these resale prices should arrange them with enough profit to cover the Southern supply dealer as well as the Northern and Western. This much needed reform cannot be brought about by your Manufacturers Committee alone. It must have the hearty support of each and every dealer in both associations, and we, as dealers, must at all times and at all hazards uphold the prices as fixed by the manufacturers, even if we do sometimes lose a sale to an illegitimate dealer who has no regard for costs or profits.

And let us not have it said of us as has been said in the past, and I fear truthfully so, that we as dealers have prevented the manufacturers from upholding a resale price by giving away half of the profit to some special customer. Let us try to keep ever before us the stern fact that when we sell an article at a percentage less than our cost of doing business we are losing money and taking a backward step that will be hard to overcome when we are forced to a realization that we must change our methods.

In my judgment, if we will do this the supply and machinery dealers' business in a few years, instead of being a drudgery and distasteful to us, will be a pleasure, and both the manufacturers and dealers will be able to show that we have uplifted the business to such a high level that we can, as associations, stand before the world and expect to be commended for righting some of the wrongs that exist in our line of business, which is growing so rapidly day by day and becoming more and more a factor in the industrial development of this grandest country on the face of God's universe.

The presentation of this subject by George Puchta of the Queen City Supply Company, Cincinnati, Ohio, was received with extraordinary interest, and in view of the comprehensive manner in which Mr. Puchta dealt with his topic the paper is given as follows in full:

"Resale Prices," by George Puchta.

The supply and machinery business, as conducted to-day, is quite new and young, when compared with other lines. In business experience, therefore, many lines on account of their years have an advantage by which we can benefit. Associations in our line are absolutely new, whereas in other lines of business they have existed for years. Therefore, again we have the opportunity to profit much by the experience of our fellow merchants. But when we learn that less than 10 per cent. of all business men succeed is the experience of our fellows as beneficial as it ought to be? But exchange of ideas and suggestions through associations, which seem to be the order of the day, will surely increase this percentage.

Business is a science. Science is defined as "knowledge of principles and causes," and when we behold such results which do not occur in other pursuits of science, such as engineering, law, medicine and others, should we not ask ourselves, as business men, are we sufficiently conversant with the science we are pursuing? Is not this responsible for many of our troubles—evils brought about unconsciously, thoughtlessly, by the manufacturer and dealer, who do not know what they are doing? We are all trying to do a legitimate, honest business, and to make it such we must have a fair profit. How can that be done if goods are sold at cost or less? The business man who knows what he is doing will not likely commence this practice. It is too dangerous.

It, therefore, follows that it must be instigated by the competitor who does not know, and which we will call unintelligent competition, and which causes most of the trouble and should be eradicated. Not in a radical manner, but by showing him the error of his ways and making him intelligent competition, and right here is where our associations can do much to improve conditions. How many have we in the business that do not know the percentage of cost to do

business; that keep no accurate accounts, but, if they did, would surprise themselves, and show them how much profit it is really necessary to have before they make anything? How many salesmen they have that are not producers? How often they permit salesmen to make prices on their goods, besides many others?

Now this brings us to the present condition where we are selling some lines so low that we would be better off if we did not sell them at all, and as one of the remedies the resale price is suggested where prices are demoralized and is in operation in some lines with good results. Now let us view the resale price from different points.

FROM THE MANUFACTURER'S STANDPOINT.

Whether the quality of his goods is high or low to meet competition he must produce them at as low a cast as possible, and unfortunately some manufacturers do not know their cost because they have no exact cost system.

How can the manufacturer distribute his product of supplies and machinery at the least percentage of cost?

Experience has proved in most cases of supplies and machinery that this can be done best through dealers instead of selling directly to the consumer. It means to the manufacturer a smaller selling force, fewer accounts and a much smaller percentage of selling expense. While I admit that the manufacturer in some cases is justified at present in selling to some of the large consumers, the fact remains that the dealer is the selling end of the manufacturer's business; it is a mutual proposition, and whenever it ceases to be mutually profitable both must suffer.

At present in many cases the differential allowed by the manufacturer is not sufficient, because the manufacturer could not begin to distribute his goods directly at that percentage without considerable loss. This and price cutting on the part of dealers in certain lines finally brings about conditions that are unprofitable to the dealer and he loses interest in such goods. He sells less or none, and the manufacturer feels forced to sell directly and finds he cannot sell his goods at the percentage he allowed the dealer.

When this condition arises both manufacturer and dealer are quite willing to do something to improve conditions, and that suggests the resale price, because, when a line becomes unprofitable, the dealer cannot afford to handle it and the manufacturer is, therefore, forced to sell as best he can, which largely increases his selling expense and in many cases actually deprives him of his profit.

In many cases the resale price plan inaugurated in the beginning has prevented the condition above referred to.

FROM THE DEALER'S STANDPOINT.

It is a fact that a number of manufacturers do not know the cost of manufacturing their goods and cost of selling their goods. It is also a fact that the number is rapidly decreasing.

Now it must be admitted that a number of supply and machinery dealers are not aware of their cost of doing business because, if they were, they would not be guilty of some of the acts committed and that have helped much to bring about present conditions, viz., selling goods at too small or no margin. Reasons given are: Because his competitor does; because it will bring other trade to make up deficient profit; because it serves as a leader, which soon makes too many leaders; because he lets his salesmen make his price, frequently giving them costs, with instructions to sell at anything above that cost; because in many cases employees have exalted ideas of profits their employers' make, thereby feeling justified they can cut prices regardlessly and still make money; because frequently the dealer does not know what it costs to do business and what percentage of gross profit must be added to his cost before he makes anything. Finally, from these various causes the dealer finds a largely increased business with little or no profit.

If he is not keeping accurate accounts he does not know how many lines of goods he is selling at an actual loss and how much improved his condition would be if he would cut out these losing lines or put them on a profitable basis. His push and energy have grown and have built up a large business, but the business science, that "knowledge of principles and causes," has not grown in the same proportion.

But he is now in a receptive mood, willing to take notice, ready to do something to make a reasonable profit and to which he is entitled. The resale price becomes interesting to him, even if he did formerly say, "I buy my goods and pay for them and sell them for what I please."

What is the resale? An agreement between the manufacturer and dealer whereby the manufacturer specifies a minimum price at which he will permit his make of goods to be sold by the dealer.

The resale price on the rebate plan is an agreement between the manufacturer and dealer whereby the manufacturer specifies a minimum price at which he will permit his goods to be sold by the dealer, and if the dealer has kept this agreement for an agreed period to the satisfaction of the manufacturer, he receives a rebate or commission, which in some cases is the dealer's entire profit.

The resale price on the rebate plan has produced the best results. It is an individual agreement between the manufacturer and the dealer, and as long as it remains an individual agreement between the two parties the legality of it is not questioned. When two or more manufacturers collectively, or two or more dealers collectively, act then the legality is questioned.

THE LEGAL PHASE OF THE RESALE PRICE.

When advised that I was expected to prepare a paper on this subject I secured 12 different resale price agreements in effect in various lines and gave them to a reliable attorney for an opinion, and also prepared these questions and received the answers affixed:

1. Do these agreements violate any laws? Ans. No. 2. If so, which ones? 3. Are these contracts binding on the parties signing them? Ans. Yes. 4. If invalid, what form could be adopted to be valid? The "no" and "yes" to questions 1 and 3 answer questions 2 and 4.

I also quote from this attorney's report the following: "If the articles manufactured are protected by patents the manufacturers have the right to make any terms, prices, conditions or restrictions they see fit. The patent statute grants an exclusive monopoly, which cannot be cut down by the rule against restraint, for that would be to grant a monopoly by law and then proceed to take it away by law.

"If two or more manufacturers who produce goods of similar class or character should combine either orally or in writing, or by a secret understanding, to put up prices, limit output or do other things against public policy or obnoxious to the law it would be in restraint of trade to an extent that would be unreasonable and illegal, but if a single manufacturer of an unpatented article should make an agreement with his customers to give them a rebate, commission or discount if they should refuse to sell his product at less than a certain price it would not be in restraint of trade, as there would be nothing to prevent others engaging in the business or the manufacturers of other articles from selling their products to any one willing to buy." The attorney further states: "I have examined a large number of decisions and have used the language of the courts in the foregoing very largely."

BENEFITS FROM RESALE PRICE AGREEMENTS.

There are many resale price agreements in effect in various lines of trade with benefit to all concerned:

1. The manufacturer in many cases has found that unrestrained competition means serious loss to him because the dealer, the selling end of the manufacturer, could not make a profit, and he was thereby forced to sell his own goods directly as best he could at a largely increased selling expense.

2. The dealer, who is considered to be a necessity, cannot exist without a profit any more than the manufacturer's salesman can exist without his salary, consequently when a line of goods become unprofitable his existence demands a change to goods that are profitable or forces him to become a manufacturer, which in many cases is a detriment to both manufacturer and dealer.

3. The consumer is not injured as long as fair profits are made, and he is protected against unreasonable charges because when profits become unreasonable that in itself invites additional competition, which is soon forthcoming, and adjusts the price.

The resale price has been adopted in some lines that we as supply and machinery dealers handle with excellent results, and while it may not be advisable to adopt it in all it could be in lines that are sold at little or no profit with much benefit to manufacturer and dealer alike, and should be encouraged. To show its popularity, in a recent letter sent out by a manufacturer asking the dealers what they thought of resale price agreements and if they would support such, answers were as follows:

87.5 per cent., Yes, with a few qualifications.
9.7 per cent., No.
2.8 per cent. did not answer.

But when a manufacturer arranges a resale price for his goods it should be the solemn duty of the dealer to uphold that agreement to the letter and not in any manner violate it and thereby make the profit the manufacturer is willing to allow him. The dealer must have the courage and honor to lose an order rather than violate his agreements.

What encouragement is it to a manufacturer if he allows the dealer, say, 15 per cent. differential and the dealer in many ways gives part of it away secretly or otherwise? Invariably when that is done and discovered, and it usually is discovered, it leads to a reduced differential, because the dealer's violation of the agreement is sufficient evidence to the manufacturer that the profit allowed is more than the dealer wants, and consequently it is reduced and the dealer alone is responsible.

I believe that many manufacturers are willing to establish resale prices on their goods if the dealers will be fair, but fair play and a square deal are essential on the part of both manufacturer and dealer. Let us prove to the world that every member of these three associations holds sacred

any agreement he may make, and if this be done many of the goods sold to-day at little or no profit can be made profitable, thereby improving his condition as well as that of his competitor. While the resale price will not cure all our ailments, and is not offered as a cure-all, it can be effectively applied in many lines with benefit and profit to all and injury to none, and these associations here assembled can do much to bring it about.

"Resale Prices," by Charles F. Aaron.

Charles F. Aaron of the New York Leather Belting Company, New York City, representing the manufacturers' side, took strong ground in favor of the proposition, reading an extended paper, presenting an exhaustive analysis of arguments for and against it, from which the following extracts are taken:

Whether such price is put on the goods by the maker, and fixed at one uniform figure and marketed by such manufacturer himself, or by the one who purchases at wholesale from the manufacturer, and then places a price to cover his expenses and profits, all goods must carry some resale price which the consumer expects to and is willing to pay.

While the user may not know anything about what the average article he buys can be delivered to him and embody the qualities that it should possess to suit his purposes, still when he is openly told that his business will be taken at a loss, because the manufacturers make such a good profit from others who have been using the goods and have been steady customers of the house for years and years, it must appeal to that consumer as well as every other one who stops to consider that the only square deal they can possibly expect will come from the establishing of a uniform resale price.

If there is an established resale price, and the article has the qualities to justify its adoption, the buyer who purchases such an article feels a security that never can be felt in the purchase of an article that has no standard of price and can be cheapened to meet any condition of price or quality.

Only manufacturers who have struggled to market such goods against the competition of those whose prices make the incorporation of quality an impossibility can know the complete happiness that comes with the victory of at last attaining a position where you have won recognition for your product, and established your right to fix the market price of it at a uniform resale price, and not have it fixed by the buyer inviting competition on inferior goods and offering you the option of cutting down the quality to meet the prices quoted, or losing the sale.

The establishment of a resale price on goods should be done without any combinations. It should be done by each manufacturer on his own goods. It would be manifestly unfair to the user to make him pay a combination price maintained arbitrarily on all goods of one class, no matter what their qualities.

"Resale Prices," by M. W. Mix.

Another representative of the manufacturers, M. W. Mix of the Dodge Mfg. Company, Mishawaka, Ind., presented a paper in which he doubted the expediency of making a resale price, believing that the solution of the problem lies in aiming to make a better quality of product and to secure a higher standard of salesmanship. His paper is in part as follows:

In taking up the subject of resale prices, I prepared a form with certain pertinent questions, which was mailed to our membership in the Manufacturers' Association. Out of about 100 sent out, I received nearly 50 replies in more or less detail. While the house is badly divided against itself as to the possibility of ever adopting fixed resale prices, the theory is rather freely indorsed, as being Utopian in conception and worthy of extension in practice. It would be quite impossible to submit this matter in detail, and my endeavor shall be to give a composite view of the situation as reflected in the correspondence. On specialty products of the supply business, the vote was generally in favor of resale prices, but, almost to a member, no hope was entertained that the principle could be universally applied.

REASONS FOR DOUBTING THE APPLICATION OF THE PRINCIPLE.

From the manufacturer's standpoint, the following were the principal reasons assigned: Lack of complete organization; distrust of competitive manufacturers; fear of anti-trust laws or other legal restrictions; variations of standards and costs of similar products and consequent spread in selling prices; varying costs of doing business; satisfaction with smaller returns; tendency of buyers to favor non-compact makers, or, by inducing such to start in business, forcing output beyond normal absorption power of the market; unintelligent competition.

From the jobber's and dealer's standpoint, the reasons assigned were: Lack of organization covering all dealers; mutual distrust of each other; inclination to make leaders of standard or popular articles of the trade; attempts to reduce surplus stock; disposition of buyers to misrepresent relations with manufacturers and create distrust among them; unfair and unintelligent competition; timid salesmanship that relies on price alone to secure business; prejudice of jobbers and dealers against handling restricted price lines; constant warfare to secure advantages of prices or terms; unreliability of some dealers; lack of attention or effort to push sales in lines so protected; and numerous other reasons of minor importance.

From the above, it will be noted that almost any single reason given would afford a theme of exhaustive debate. Every contention is applicable to certain individuals of every trade, be he manufacturer, jobber, or dealer. The hopelessness of the situation arises in that there will always be enough manufacturers and distributors not in accord with such a policy to afford an ample field for the piratical operations which infest every branch of trade.

DEALERS RESPONSIBLE FOR PRICE CUTTING.

Unless it is for purposes of introduction, there is no reason why a fair margin should not be required on all supply lines, as the manufacturers very seldom go directly to consumers where proper representation may be otherwise secured in the trade. The odium of the price cutting evil seem to rest with the dealers themselves, as their contact is directly with the user. Each conducts his own independent business, regulates the cost of doing business, and should know what profits are necessary. Some are more capable than others in the manner of conducting their business; some may have more advantage in service or location; but in the main, about the same margins over cost are needed in every distributive line. It does not require any proof on my part to make the claim that dealers really establish their own rate of margins, for when left to their own inclination they will voluntarily sell goods on much closer margins than a manufacturer will allow on a resale deal.

There are two general divisions of the supply trade: One, in which the manufacturer conducts more or less of a specialty business, and has only one distributor in a community; the other, where all dealers or distributors may buy and sell identical lines. In the former class a manufacturer may control the manner in which his product is marketed, particularly so if he has forstalled himself by creating and maintaining a general demand for his product, and making it a desirable line for a dealer to handle, by virtue of its meritorious qualities and reputation. The dealer will zealously guard such an agency, and if it has a good sales organization, he will develop a profitable business. In this class the number of distributors to be considered are few, say less than 200 for general representation. In a general line, handled by all dealers, numbering in the thousands, and controlled more or less through jobbers and general district agencies, supervision of the distributing machinery becomes complicated and beyond control to any degree, excepting on lines protected by a monopoly. Such lines generally create the greatest havoc among the trade, because of their being popular articles of daily demand, and becoming shining targets as "leaders" to influence other business.

Granting that resale prices are desirable, until a firmly established confidence may be had between all men, there can be no general adoption of that policy on the part of manufacturers, excepting by virtue of an absolute monopoly, and this is obtainable only through the protection of United States patents, or through a trust or trade combination, whereby all outlets of manufacture and sale are under one responsible management. The former is possible in only a few specialty lines; the latter may be in restriction of trade under the Sherman act as now interpreted.

THE BUSINESS MAN IS FREE TO ESTABLISH HIS OWN PRICES.

There is no legislative right that would ever justify a law to compel specific margins of profit on sales. The business man is thus left to his own inclination or ability to establish prices to suit his policy of doing business. He must be governed by common sense; by his expense accounts; by a proper recognition of the rights of fellow business men, and by the possibilities of the trade in which he operates.

This applies equally well to manufacturers and dealers. Every manufacturer is interested in making a profit on his sales, and in having his distributing trade do likewise. Every dealer is equally interested in good profits and a stable business; yet the history of the trade shows the apparently uncontrollable desire of the dealer to make a lower price than his competitor as an inducement for business.

Grant that all manufacturers of given lines are able to agree on fixed prices to all trade of a similar kind, experience has shown that only extreme measures will secure even a partial co-operation on the part of the distributors, and in no case can it be assured that fixed resale prices will be maintained. You are all too familiar with the many subterfuges and underground routes that are used to require enumeration of them at this time. Personally, I believe the solution of the problem lies in another channel, and I stand

here to-day to make an appeal for a better quality of product and a higher standard of salesmanship.

The very essence of the trouble is due to a policy that every manufacturer and dealer will admit as being fatal to the success of any business. It requires no salesman's skill to sell well-known goods at lower prices than your competitors do. You will all admit without debate the absolute folly of selling goods without reaping a profit. Why, then, should it not be the slogan of manufacturer and distributer alike to see that good profits are obtained, that the practical advantages of goods offered be fully set forth, and their values expressed in dollars and cents in the cash boxes of both interests? A cut price does not increase the rate of consumption of any article of supplies, machinery, &c., but really works harm to the buyer, as by so procuring them he encourages reduced quality and blinds himself to any practical merit that the article may possess.

This profession of business deserves a better effort, a most sincere interest in the real underlying principle and a better perception of what constitutes good salesmanship. All interests suffer alike in this, and while it may be said that manufacturers employ a higher standard of salesmanship, I do not believe this is true, when the relative importance of the interests is considered.

Enough stress cannot be placed on the value of good salesmanship as a remedy for the evils due to demoralized prices. It follows from the head of the largest manufacturer among us to the most insignificant employee of the smallest supply house. It requires the constant education of employer and employee alike, and the task is never done until the principle is firmly rooted.

The Relations Between the Dealer and the Manufacturer.

This is a topic which was presented by the reading of three papers. The first was by J. G. Doon of the Fairbanks Company, Baltimore, in part as follows:

Allowing for exceptional cases there is ample reason to know that the manufacturer must ever, in a greater or less degree, depend upon the selling organization maintained by the dealer as the legitimate as well as the most economical medium through which he can market the bulk of his products, and when, in a single instance, he makes use of the capital and the facilities thus provided he commits himself, in my opinion, to the proposition that the dealer, as such, has proprietary rights which at least he is morally obligated to respect.

According to my analysis the manufacturer usually contemplates any business policy with respect to what he conceives to be the best methods for the development of his own interests, but speaking generally, I do not believe that he is disposed to leave the dealer out of his calculations, nor do I believe that any trade policy which merits suspicion on the ground of its expediency or of its finesse is characteristic.

A number of manufacturers selected at random to consider dispassionately a closer relationship with the dealer would probably fail to agree in all of their estimates of his rights, for the reason that the motives present to actuate the individual mind, however good and sound from some viewpoint, would be found in reality to be as variously fallible and as human as any which influence the dealer in his pursuit of self-interest among competitive surroundings; hence it might be anticipated on such an occasion that candidly expressed sentiment would range from views of liberal protection to the dealer to no more than an admission of the dealer's rights to very limited advantages of a contingent character.

That the relationship will always live upon terms of cordiality between individuals and that it will thrive generally when under the influence of common sense ideas is not to be doubted, but, in my opinion, conditions will approximate the ideal only when its benefits and its obligations are universally realized to be mutual. Then will the time draw near when vexatious misunderstandings will be adjusted from the standpoint of kindred interests, and every impractical thought or suggestion for the regulation of real or fancied fault, which savors of coercion or reprisal, will give place to broad-minded sentiment in the mind of every dealer and manufacturer.

In the meanwhile, for I believe the millennium is not yet, I venture to state my conviction as a dealer that the manufacturer will barter his best favors for good facilities, technical capacity and loyal service, and in proportion as the dealer is deficient in his equipment will he continue to struggle with the problem of his rights and the question of the relations between the dealer and the manufacturer.

The second paper on this subject was by Wm. J. McDowell of McDowell, Stocker & Co., Chicago, and from it the following extracts are taken:

PREFERS THE WORD "MERCHANT" TO "DEALER."

While the word "dealer" has been used to designate the person or persons who carry a line of machine tools or supplies in various cities, and who are known as representatives or agents of the manufacturers, I would prefer to change the name of this person or company selling either machinery or supplies, or both, from the word "dealer" to "merchant." It is largely because the dealer has become a merchant that the relations existing between us should be different from what they have been heretofore. When the dealer was a person who sold goods on commission from a consigned stock, doing no advertising of his own and having no organized selling force, it was not necessary that he should be so closely connected with the manufacturer as he should be now. To-day the men who make a business of selling machinery or supplies are real merchants who invest thousands of dollars in a stock of goods which they carry in their own warehouse or showroom, who do a great deal of advertising on their own initiative and who have a well organized sales force of high grade men, and who pay for their goods regularly. The modern machinery merchant stirs up business independently of inquiries which may reach him from various sources. He sees to it that his customers and all the users of machinery in his territory are notified of his ability to serve them in every possible way as regards their machinery and shop requirements. The merchant is to-day so close to the manufacturer that we may say he is practically the selling end of the manufacturing business.

Many merchants and manufacturers have grown up together, the one helping the other. Some former machinery salesmen are now sales managers for manufacturers, and others are managing shops of these manufacturers, while some of the former shop managers are now become machinery or supply salesmen employed by the merchant. A great many of the manufacturers have been compelled to enlarge their plants and keep them going day and night because of the live and energetic work done by the machinery and supply merchants. Many cases can be cited where some merchant approached a certain man or group of men and proposed they start the manufacturing of an improved line of goods —say a new style engine lathe, or a line of machinists' tools. The merchant promised to take a certain amount of these goods for his particular territory, and agreed to use his influence to get other agents in other localities, and so in the course of a few years another machine tool or supply manufacturer has been able to make connections with a large group of merchants throughout the United States who are taking all the goods he can produce. Again I could cite you a case, and no doubt there are many of them, where a manufacturer has started a merchant in business representing only one line at first, but later on adding a complete assortment of machine tools and supplies.

EACH INDEBTED TO THE OTHER.

Who shall say that the manufacturer owes his success to the merchant or the merchant his success to the manufacturer? The truth is they are each indebted to the other. Some of us are peculiarly adapted to manufacturing and others of us to selling. The machinery and supply merchant cannot do business to-day without the aid and co-operation of the manufacturer, nor can the manufacturer put his goods on the market in a successful manner without the hearty and active assistance of the merchant. Co-operation, therefore, is the essential feature in our relations with each other.

The percentage of profit which the merchants have been getting is not what they need and what they should receive. I am one of those who believe that the manufacturers are willing to give us a larger percentage, but some of them have not been able to do so because there has been no united action on the part of all competing lines. Had the Machinery Committee of the National Supply and Machinery Dealers' Association arranged to meet the various groups of the Machine Tool Builders' Association, as proposed at the Detroit meeting, I am sure that some matters would be in better shape to-day. There is no doubt that the manufacturers wish to know all the true conditions of our trade, and if some arrangement could be made so that all the manufacturers of a certain class of machine tools or supplies could get together with a committee from the dealers' associations and have a personal conference I believe that all of those manufacturers present would agree to give their representatives an increased discount, but when one of these manufacturers holds back he influences the action of all the others. The manufacturers are making more profit on their goods to-day than ever before, and some of them have forgotten that the merchants are the ones who have had much to do with their increased business and increased profits. Machinery men work hard and long each day and they are certainly not getting an adequate return on the money invested and for the kind of service rendered both to the manufacturer and to the consumer. These new relations now existing most truly command a larger return. When merchants were merely distributers a small percentage of profit was satisfactory, but now that we not only distribute the goods, but create a demand for them, we are justified in demanding a profit commensurate with the work we do.

SOME CAUSES OF FRICTION.

All successful machinery and supply merchants have built up their business along the line of exclusive territory arrangements, with reciprocal protection. The experience in

handling the open-to-all lines is something that the merchants do not wish to have repeated, and the goods that sell at "any old price" usually do not redound to the credit or reputation of the merchant or the maker. One of the local machinery merchants' organizations established a policy of refusing to quote on any of the open-to-all lines. If that association and all other local associations should continue that policy it would not be very long before most of such lines would be tied up in exclusive agency arrangements with some one of the local merchants. Such arrangements are proved to be mutually satisfactory. A. & Co. sold a machine into a territory which was controlled by B. & Co., and sold this machine to a customer with whom B. & Co. had been figuring. A. & Co. were aware of the fact that B. & Co. were the agents in that territory, and when this matter was put up to the manufacturer he said he had no control over any machine of his make that was shipped from one merchant's store into any other merchant's territory. It is regrettable that there exist such weak backboned business men among the manufacturers, and it is equally to be regretted that there exist such extremely selfish merchants belonging to the class indicated as A. & Co.

Perhaps the time has come for the formation of a Board of Conciliation or Arbitration, to consist of a few members from both of the dealers' associations and a few from both of the manufacturers' associations, with authority to decide definitely on such matters as referred to above. When such a case occurs all the facts should be laid before this board with a request that they take definite action with the least possible delay. This board also should have placed before it all matters pertaining to the cutting of prices by the merchants. On some of the supplies and smaller machine tools where two or three merchants in one city are handling them on a resale price plan, and one accuses the other of cutting the price, all the facts should be presented to this board. Its decision should then be made known to all members of all the associations whose members would be benefited. It seems to me that great good could be accomplished by such a board, not only in the specific cases that would be presented to it, but as a preventive against such cases occurring.

Different forms of contracts have been prepared by the manufacturers and by the merchants, but as yet this subject is still under consideration. When we ask a manufacturer to protect us we must also assure him of our hearty and loyal support, and I believe that every machinery merchant will give that support if the manufacturer will give us the protection we ask for. Should a contract be entered into, it ought to protect all parties, and the same form of contract should apply to every part of the country, so that all the merchants would be on an equal footing. Some provision should be made in such a contract to protect that merchant who has spent time and money in missionary work to establish a certain article and has created a demand for it. The experience has probably come to every prosperous merchant of having an agency taken from him which he has built up in his exclusive territory, this arrangement having been cut off for no apparent good reason. When a manufacturer trusts a merchant with his line he will be shown extreme loyalty, and if that trust is violated the manufacturer could withdraw the agency without much protest from the merchant, but where an agency arrangement is broken off by a manufacturer, as just mentioned, our association ought to come in through the Board of Conciliation, as suggested above, and take action. The merchants, of course, are to blame for a good many of the abuses which exist in our trade, but the largest and most successful merchants to-day are striving to give the manufacturers a square deal in every way.

The third paper, presented by J. H. Drury of the Union Twist Drill Company, Athol, Mass., contained the following suggestions, which were enthusiastically received:

MUTUAL PROFIT STRENGTHENS RELATIONS.

The relation between the manufacturer and the dealer is governed by conditions which appeal to the interests of each, and this relation may be summed up in the two words "mutual profit." Anything that can be done toward making "mutual profit" more attractive strengthens existing relations. It is conceded that the distribution of goods by the manufacturer, through the channel of the supply houses, is generally and should be a less expensive and more satisfactory method. Exceptions, however, are recognized as follows: The difficulty to interest dealers in a new line of goods; the carrying of larger and more complete stocks; the lack of knowledge of the detail of mechanical points; the desire on the part of large consumers to buy directly from the manufacturer, and the maintenance of prices. The last, perhaps, is the most important, since it affects "mutual profit," and is responsible for the creation of many vexed problems.

The lines of supplies usually carried by the supply houses may be grouped into three classes: 1. That class of material or supplies which is carried in stock by many dealers and sold largely to consumers. 2. That class of material, or supplies, carried extensively by some dealers and sold largely to manufacturers. 3. That class of material, or supplies, which on account of its peculiarity, or the amount of capital involved, requires direct representation or agency. On the first two classes mentioned discounts are allowed, which represent a fair margin of profit to the dealer. Through competition, however, these discounts may, to a great extent, be dissipated. The third class offers the greatest profit and satisfaction to the dealer, on account of its peculiarity. It is without doubt true that a multiplicity of dealers in one locality, handling the same line of goods, creates a tendency to cut prices, and the maintenance of price is, if not the main point, essential to the welfare of both manufacturer and dealer.

MACHINERY AGENCIES AN EXAMPLE TO BE FOLLOWED.

The machinery dealers and machinery manufacturers have come nearer to a solution of this problem than many of the supply manufacturers. They create agencies, which carry the right to certain territory, together with certain established prices, and they represent in a practical way the manufacturer in their locality or territory. This method, or policy, is one that may be carefully considered by both supply dealer and manufacturer. Some approximation of this plan, or policy, may be followed with profit where certain modifications are applicable to the various lines.

It may not be desirable to limit the first class except through a differential in discounts favorable to the larger dealer. The second class may be strengthened by some limitations, as the manufacturer can maintain a better oversight of prices with a few dealers. If every dealer carrying a line of goods should make an effort to represent the manufacturer who subscribes to the principles of this association, and follow the ideas and policy of such manufacturer, in disposing of goods, he will approximate the ideal condition.

A complaint may be mentioned which has been brought to my attention by a prominent manufacturer—that is, the disposition on the part of salesmen to accept the claims or criticisms of purchasers without due consideration of the manufacturer's interests. Another point which should be given a great deal of consideration is the training of young men in the supply business. A system of apprenticeship should be considered whereby a young man may serve three or four years on a similar basis to that employed in manufacturing establishments. The result of such a course of training is obvious. From the hardware store to a supply department and from the supply department to a strictly supply house is but a short step. The next development will probably be specializing in the supply house and the creation of departments confined to different lines.

Increased facilities, a greater knowledge of the goods and a singleness of purpose, which cannot be affected by competition, must prove attractive to manufacturers and merit their proper consideration. I hope that the members of the dealers' associations will become more thoroughly acquainted with the members of the Manufacturers' Association and will make an effort to extend practical support to such members. I also suggest confirmation of the resolutions in existence between these three associations. By so doing it will be only a short time when the desirable manufacturers of supplies will become members of this association. With the growing tendency toward association and organization, both among manufacturers and dealers, better conditions will be the result and "mutual profit" become a realization.

The Manufacturers' Association.

The executive session of the Manufacturers' Association on Thursday afternoon was opened by a discussion of the subject of adopting a pin, button or some similar emblem whereby the dealers might readily recognize members of that association or their salesmen. It was suggested that, in place of the pin or button, a line on the stationery of a member stating his membership would be sufficient for the purpose of designation. The outcome of the discussion was a motion that the matter be left in the hands of the Executive Committee.

On motion of Edward C. Hinman, the following committee was appointed to confer with like committees of the two dealers' associations concerning the subject of "Resale Price": Chairman, Charles F. Aaron, New York Leather Belting Company, New York City; Henry Sharpe, Brown & Sharpe Mfg. Company, Providence, R. I.; John J. Voorhees, Voorhees Rubber Mfg. Company, Jersey City, N. J.

Discussion drifted toward the subject of "Cash Discount," John Trix of the American Injector Company, Detroit, Mich., opening with an interesting narration of

the experiences of brass goods manufacturers in this connection. He said that in this trade the cash discount is very badly abused. The brass goods manufacturers of Detroit have for some time had a committee to endeavor to check the abuse. While buyers of brass goods, he said, ask 60 or 90 days' time, and when they pay in 40 days deduct 2 per cent. for cash, the producers of these goods must present a certified check before they can take their copper and other metals from the railroad cars. "We do not feel justified," said he, "in being bankers for concerns handling our goods." He stated that the Detroit committee is now working in conjunction with a similar committee of Cleveland brass goods manufacturers to attempt to bring matters to a more satisfactory basis, as the general sentiment is in favor of the rigid enforcement of the terms of 30 days' payment, with a 2 per cent. discount for 10 days and no more.

Speaking for the brass goods manufacturers of Cincinnati, Charles E. McFarlan of the Wm. Powell Mfg. Company, said that any relief from present conditions would be hailed with joy.

Charles F. Aaron of the New York Leather Belting Company suggested manufacturers in different lines getting together and enforcing uniformity of discount and terms in their own line.

The discussion terminated in the appointment of a committee of three to investigate the subject and recommend a course of procedure to be followed. This committee consists of John Trix, American Injector Company, Detroit, Mich.; E. Bertram Pike, Pike Mfg. Company, Pike, N. H., and F. A. Hall, Yale & Towne Mfg. Company, Stamford, Conn.

FRIDAY MORNING SESSION.

Friday morning's joint session opened with the presentation of papers on the subject of

Cash Discounts.

Phil. Pidgeon of the Pidgeon-Thomas Iron Company, Memphis, Tenn., representing the Southern Supply & Machinery Dealers' Association, spoke as follows:

I believe that it is generally conceded by the manufacturers who allow it and by all who receive it that the cash discount is a premium offered for prepayment. It was a wise provision; the results of its workings are far-reaching. It makes your collections and mine easier and cheaper; it enables us to turn over our capital oftener, strengthens credit, shows who is the desirable customer and who is not, is a tonic that does every one good who takes it and affects favorably the whole business system. This feature in the settlements of purchases of merchandise has prevailed for so long a time that it has become a fixed and necessary institution in the mercantile world.

I am pleased to say that the majority of manufacturers employ the 2 per cent. 10 days' terms. However, there are a great many manufacturers of hardware and mill supplies who have changed their terms of payment to either net 30 days or to 1 per cent. in 10 days. I know of no good reasons for these changes, and think those manufacturers who make them are standing in their own light, as they cannot expect as prompt payment of their accounts when they do not offer an inducement for prompt payment. As an example of how liberal cash discounts serve the interests of a manufacturer, we know of one concern whose terms are 30 days net or 2 per cent. 10 days, who had the following record: 1905, sales, $60,000, loss less than $500; 1906, sales $70,000, loss not 1 cent. I think this one example is sufficient to show that the cash discount is a good collector, as this record has probably been made by manufacturers whose terms were net, or with small cash discounts. No jobber can afford to miss a cash discount that is equal to 33 per cent. per annum, when money can be had for the asking at 6 per cent.

JOBBERS CANNOT CHANGE THEIR TERMS.

Our protest against the change in terms is met with the suggestion that we change our terms accordingly. This we could not enforce, as it would require an organization on the part of all the jobbers and dealers throughout the country. That would be impracticable, if not impossible. The result would be, in my opinion, to make jobbers' collections slower and more expensive and generally unsatisfactory. The jobber is, after all, merely a distributer for the manufacturer, employing his capital and labor without a fixed compensation, subject to the keenest competition from all sides and without any of the advantages of agreements as to fixed prices and terms for his wares. The result is that his margin of profit is small indeed.

It would cost the manufacturer nothing to allow the cash discount, as I understand it. His selling price could be increased to provide for it. The way has been shown by some of our largest and most representative manufacturers, notably the American Steel & Wire Company, which some years ago changed its terms to net 30 days. A protest against the change was quickly made by the jobbers and their associations, and the action reconsidered and the old terms of 2 per cent. 10 days restored. This action on the company's part showed a true appreciation of the importance to the jobbers of the cash discount feature and likewise a liberal spirit of co-operation, which was greatly appreciated by its distributers.

The cash discount is the best collecting agency in the world. The time will never come when the 2 per cent. cash discount has lost its usefulness, at least not until human nature reaches that point that the premium offer fails to appeal. While contending for the unanimous adoption by the manufacturers of the 2 per cent. cash 10 days' terms I mean 2 per cent. 10 days and not 2 per cent. in 30 days.

Geo. T. McIntosh of the McIntosh Hardware Corporation, Cleveland, Ohio, representing the National Supply and Machinery Dealers' Association, said in part:

What is the 2 per cent. cash discount? Is it a matter of interest on money, or is it a premium for prompt payment? We claim the latter, and our arguments will be along that line.

During the early years of the National Hardware Association it developed that there was a variation of terms among the membership. In some sections goods were sold on three to four months' time, with a 5 per cent. discount for cash; and as the association work apparently educates the members (even the brightest of them), these people soon saw the folly of their terms, and pulled up to the 60 days or 2 per cent. cash, so that to-day the terms in the hardware and supply business universally are 60 days or 2 per cent. cash. The retail hardware merchants as well as the manufacturers have adopted their business to these terms. Some take the full time, and the large majority of those taking the full time usually take 30 to 90 days extra in order to carry on their business. Others discount at 2 per cent. in 10 days, among these, manufacturers who are attempting at this time to adopt these terms of 30 days or 1 per cent. in 10 days. Many of these manufacturers bunch their bills, and take off the 2 per cent. on the 10th to the 20th of the month following, which to our mind is a very satisfactory plan. Now, are the customers who take the full 60 days, and from 30 to 90 days extra, as satisfactory as those who take the 2 per cent. cash discount? And are not the latter entitled to a premium for prompt payment, even more than the value of the money in simple interest? We contend they are; and all we ask of the manufacturers we willingly grant to them, and the same to the retail merchants to whom many of us sell.

THE CASH DISCOUNT FIXES THE CREDIT RATING.

Another strong argument in favor of the cash discount is the fixing of the credit rating of customers. Most manufacturers confine their trade closely to dealers and manufacturers, members of the association represented at this meeting, the National Hardware Jobbers' Association, or other large hardware jobbers and supply dealers; and I point with pride to the fact that in no other class of trade is the percentage of failures less.

The dealer, however, to whom you sell your product, must seek smaller trade, most of whom are unknown to him, and many are not very strong but probably honest. We judge their credit largely by the way they pay their bills. We want them all to take the cash discount, as we don't want large accounts with them. We are sure that if this cash discount was 1 per cent. instead of 2 per cent., very few of them would give it any attention, but would take the full time and probably one to two months more, thus compelling us either to give them a larger line of credit than we wish to, or refuse them entirely; and we cannot afford to give them this 2 per cent. unless you grant us the same discount.

Furthermore, it is a great injustice for some few manufacturers, who are at present crowded with business, to take advantage of the situation and arbitrarily change their terms, as a few of them have recently done. They say to us, change your terms accordingly; but, gentlemen, we cannot. Our terms of 60 days or 2 per cent. cash have been in force so long that they cannot be changed.

CASH DISCOUNT FIGURED IN COST OF MANUFACTURING.

Again, does it reduce the profit of the manufacturer to allow this 2 per cent. discount? We answer, positively no, it does not, and our authority is some of the leading manufacturers of hardware in the country, who state it is all figured in the cost of the product, and explain that successful manufacturers figure their cost about as follows:

First, cost of raw material; added to that, cost of labor, waste of material, cost of packages, packing and every other expense from the time the raw material starts in until ready for shipment. Added to this is the salary of offi-

cers, superintendents, office employees, salary and expense of traveling salesmen, depreciation of plant, machinery, and lastly, cash discount, which they allow in selling. After thus obtaining the cost of the goods net, they figure a selling price based on this cost, so that their profit is a net profit. We contend this is absolutely right, and never for a moment object to the manufacturer obtaining a reasonable profit. All good merchants prefer this, realizing that if manufacturers obtain a good profit they will furnish a better quality of goods.

To sum up the whole matter, I believe I voice the feeling of 90 per cent. of the membership of the National Supply and Machinery Dealers' Association and of the National Hardware Jobbers' Association when I say to the hardware, supply and machinery manufacturers of the country that we want this 2 per cent. cash discount. We want to work with you in harmony on this and all other matters. We will not work with you in harmony until you make this allowance, but will make your life miserable each month until the concession is granted.

Willard Parker of the Pennsylvania Shafting Company, Spring City, Pa., representing the American Supply and Machinery Manufacturers' Association, said:

When the subject of cash discounts was assigned to me for this meeting I addressed a short circular letter to each member of the Manufacturers' Association asking his views and experience in this line. I sent about 100 of these letters and expected a couple of dozen replies. Instead, however, I received 87, many of them several pages in length, and all entering with great interest into the spirit of this discussion. It will be seen that this paper instead of being an exploitation of my own views on the subject is rather of the nature of a "Variorum Shakespeare"—a collection and compilation of the ideas of others—many of them representing a vastly longer and broader experience than mine.

This subject should be approached with a full belief in the absolute community of interest between the manufacturer and the dealer, for it is only by perfect co-operation that either class can succeed.

THE GOLDEN RULE AND THE IRON RULE.

To begin with, we may lay it down as a safe proposition that in the long run everybody must treat his customers as he is himself treated. This is not the Golden Rule which we learn in Sunday school, but the iron rule of stern commercial necessity. What then is the manufacturer's success when he endeavors by availing himself of cash discounts to save a little money toward paying some fellow $8.68 to write his paper for him?

First comes steel, and 30 days or ½ per cent. 10 days is the best that he can do. Pig iron and brass and copper offer the same terms. Rubber is 10 days net spot, and it would appear that leather and lumber are about the only important lines of raw material now offering a cash discount. As to labor—well, I knew a newspaper man out West once who got a cash discount by inveigling his printers into a poker game on Saturday night, but I know of no other way to secure a cash discount on the payroll.

Having thus shown that the manufacturer is unable to secure any cash discounts on either his materials or his labor we inquire "why should he be asked to give what he cannot get?" In seeking a reply to this question we must inquire first, whether the average manufacturer's profits are so great that he can afford to offer this concession. To this proposition I answer most emphatically "no!" I submit that there has never been a time in the commercial history of America when the manufacturer was working so hard for so little margin as he is right now. This may sound like an incendiary statement—a calamity howl—in these days of almost feverish activity, but let me ask you whether there is a manufacturer in this association who is getting to-day anything like the advance on his finished products that he is obliged to pay on his raw materials, as compared with three or five or ten years ago? In the language of Brutus: "If any, speak, for him have I offended," and I know that all the rest of us will hasten to congratulate him and ask him how he does it.

As a matter of fact, what with American raw materials under high tariff protection, strongly combined and habitually sold abroad to the foreign competitor cheaper than the American manufacturer can buy them, and the price of labor forced up by arbitrary advances in the necessaries of life, and the edge of competition sharpened to a hair-splitting keenness because small margins necessitate big volume, the American manufacturer to-day, busy though he be, is literally between the upper and the nether millstones, and to ask him to sell upon terms more liberal than those upon which he can buy is a hardship indeed. In seeking, therefore, for the *raison d'être* of the cash discount system we find but one explanation—force of habit and long established custom.

DISCOUNT REDUCED TO EQUIVALENT INTEREST.

Right here let us stop a moment and consider the rate of interest which discount means:

60 one 10 means 7 per cent. per annum.
60 two 10 means 14 per cent. per annum.
30 one two 10 means 9 per cent. per annum.
30 one 10 means 18 per cent. per annum.
30 two 10 means 36 per cent. per annum.

while the discount of 30 five 10, which we still see occasionally quoted, means interest at the Shylockian rate of 90 per cent. per annum, throwing in the pound of flesh to be cut from the manufacturer's body nearest his pocketbook, with, alas! no prohibitory restriction as to the shedding of blood. And if we wish seriously to consider such terms as 30 days or 2 per cent. for cash on the tenth, fifteenth or twentieth of the following month, we would be obliged to invoke the aid of spherical trigonometry and the differential calculus to determine the rate of interest represented.

The system of liberal cash discounts had its origin in the days when money was worth from 8 to 20 per cent. per annum, and credit information was difficult or impossible of procurement, and served, of course, the double purpose of furnishing the manufacturer with additional capital and lessening his liability to loss. But do the reasons which led to the establishment of this custom still exist? I submit that they do not, or, if they do, it is in a lesser and a constantly diminishing degree.

Any manufacturer who is reasonably prosperous can get all the money he ought to want at 5 or 6 per cent., while it is a well established fact that the customers who fail and make losses for us are not the customers who discount their bills, and the constantly increasing proportion of manufacturers both in raw and finished lines, who are making 30 days net and offering no discount at all, would certainly indicate that in these days of mercantile agencies and credit insurance the cash discount as a protector of credits has outlived its usefulness.

DIVERSITY OF OPINION AMONG MANUFACTURERS.

Any question which has to do with the changing or abolishing of an established custom must necessarily give rise to great diversity of opinion, and I confess that when I scanned four score manufacturers' letters on this subject, I heartily wished that the topic assigned me had had to do with politics or religion on which you do, once in a while, find two people thinking alike! Some considered the cash discount the greatest and most glorious thing that ever happened, while others regarded it as a snare, a delusion and a fraud, and between these two extremes were as many gradations of opinion and practice as there were manufacturers.

But the trend of thought in this line will be shown by the following figures:

47 per cent. of those from whom I heard are giving 2 per cent.
18 per cent. of those from whom I heard are giving 1 per cent.
4 per cent. of those from whom I heard are giving ½ per cent.
30 per cent. of those from whom I heard are giving no discount.
One house on one line is giving 5 per cent.

Of those who give the 2 per cent. discount, over half expressed themselves most forcibly as disapproving the custom, but stated that it was forced upon them by long established practice and competition. Those who allow 1 per cent. seemed reasonably happy, while the letters of those who had discontinued the practice altogether fairly beamed with satisfaction.

On one point only do all of our members who are now giving, or who ever have given, a cash discount seem in perfect unanimity, and that relates to discounts unjustly deducted after the expiration of the agreed time. With one accord and one voice they protest against this "rubbing in" of a custom which, at best, is a hardship.

Our conclusions seem to be:

1. The cash discount custom as formerly practiced is on the wane.

2. Either the controllers of raw material must restore the terms of the past, or the manufacturers will be compelled to withdraw or lessen the cash discounts which they allow.

3. As a compromise basis between the 2 per cent. of the past and the inevitable ½ per cent. or elimination of the future many lines, notably the Bolt and Nut Association, are adopting the terms of 30/1/10.

4. The present disregard of terms and filching of undeserved discounts will do more than any other one thing to hasten the abolition of the system, and the interests of all parties demand that as long as cash discounts are allowed the terms of sale should be rigidly lived up to.

But as the good salesman puts himself in his customer's place and endeavors to sell him only what he honestly believes it to be to his customer's real interest to buy, so we, as manufacturers, must put ourselves in the places of the dealers and jobbers, our customers, and, recognizing the fact that their interests are ours, consider this question in its bearing upon their circumstances as well as upon our own.

There is little reason to expect that the controllers of raw material will recede from their present position, which means the practical abolition of their cash discounts. The manufacturers must, accordingly, be gradually forced to follow suit, and the jobbers will then find themselves, as the manufacturers are now, asked to give discounts which they

can no longer get. Is it not, therefore, their best policy, instead of urging the continuance of a custom which has manifestly outlived its usefulness, to join hands with the manufacturers and by themselves gradually reducing and ultimately abolishing the cash discounts which they give, hasten the time which is sure to come sooner or later when everybody will be expected to pay his bills with equal promptness, and let us devoutly hope—will do so?

E. A. Peden of the Peden Iron & Steel Company, Houston, Texas, made an extemporaneous speech in opening the subject,

Cost of Doing Business.

He referred feelingly to the great cost at which some men are doing business nowadays—their lives. After urging upon his listeners the importance of knowing the costs, he seemed to touch a sympathetic chord when he spoke of the alarming manner in which cost sheets show a dwindling of profits, even in these days of business activity. He said that, no matter how good the business, costs must be watched most carefully, and the ratio of costs must be constantly kept down. He added that the jobber who thinks he can do business in the South at 10 per cent. will be disappointed, as he doesn't think that it is safe to figure less than 12½ per cent.

A paper on the same subject, by Wm. H. Taylor of the Scranton Supply & Machinery Company, Scranton, Pa., was read by Fred. W. Bleckley in the absence of the author. It was a well written treatise on the principles to be laid down in conducting a business so as to insure satisfactory results.

A. T. Anderson, secretary-treasurer of the National Dealers' Association, replied in a bright, snappy way to some of the points covered in Mr. Parker's paper, concluding with the argument that the 2 per cent. discount should not be viewed from the standpoint of 36 per cent. interest, but as a premium on promptness.

C. C. Hanch of the Nordyke & Marmon Company, Indianapolis, Ind., said that one of the first stepping stones in the evolution of a general use of the resale price must be the adoption of uniform list prices. The cash discount, he said, is a handicap to the resale price, as it is, in effect, a rebate. He predicted the ultimate abolition of the cash discount, and spoke of the benefits of co-operation for the prevention of unintelligent competition.

President Strong of the National Dealers' Association called upon Henry Sharpe of the Brown & Sharpe Mfg. Company, Providence, R. I., and Mr. Sharpe responded as follows:

The resale price is something which is not new to our concern in the matter of machinery, and it has worked so well in machinery that immediately when it is suggested or talked about in the supply line it immediately gets me interested. I have come here with the idea of gleaning all I could from what was said and what was being thought about along that line. In the line of machinery we formerly had no agents. We had always, as far as I can make out, in the history of our concern, maintained one price for machinery. When it came to the matter of being agents for machinery, it was with somewhat of trepidation that we debated whether we would embark in it, because we were very much afraid that the agents would not adhere to prices; and when we did embark in it, it was with the distinct understanding that the one price system should be maintained, and it has worked exceedingly well. I think in the machinery trade of the country, in the better class of machinery certainly, the resale price, or the one price system, is practically in vogue; or if it is not in vogue it is very much in favor, and they are fast getting so that it is becoming the rule.

ATTACKS THE CASH DISCOUNT.

The matter of cash discounts has interested me very much. I have always been taught in my business training that when a man has something to sell he should get what he asks for it. Now, whether he gives a cash discount or whether he does not give a cash discount, he should be paid according to the terms on which he sells. The cash discount system has been tremendously abused. Whether a man pays your bill at 99 cents on the dollar or whether he pays 5 cents on the dollar, the wrong in each is only a question of degree. Whether he takes off 1 cent or takes off 95 cents, it is simply a matter of thieving; and if this association can do nothing more than that, I say that it can agree to frown upon thievery, and when one dealer or one manufacturer acquiesces in his customer subtracting 1 cent or 95 cents from his bill without making protest, it seems to me he is only acquiescing in thievery, and he is doing wrong to the trade in general, and to business integrity in general, if he allows that thing to continue.

It has been a question in my mind what the association can do. It seems to me that it should put the resolution before the other associations and place the matter in its true light. The objection raised to refusing to accept 99 or 98 cents on the dollar is, that unless you do within the intervening time get your money, perhaps the man may fail or something else happen to prevent your getting the 98 cents out of him and you might only get 30 cents, but if that is the case it is perfectly right that a member of this association or the membership of this association in general should be placed in a position to accept 98 cents, and in that case the party can be reported to the secretary of the respective association, who, if necessary, can work in conjunction with the secretaries of the other associations—the dealers' associations—and pressure can be brought to bear by reason of which he will give up the other 2 cents in a hurry.

Now as to the comparative merits of the cash discount system and the net system, I might say that we are, as many of you know, great partisans of the net system. Our business has been partly on a net basis, but in the intervening years the cash discount system has increased, and what is it coming to unless some stand is taken? Our English agents have their own list of machinery and their machinery is sold upon this basis. Say an article is listed at $1, it is sold at 3 per cent off, less 2½ per cent. for cash. I have always imagined that 3 per cent. had a historic basis and that it was formerly a cash discount. I do not know, but I am informed, that 2½ per cent. off for cash, which is regarded as cash, is taken by large concerns which pay in two, three, four, five or even six months. I have said to our agents, "Do you allow them to take 2½ per cent off?" They answer, "Certainly we do; glad to get our money." I do not know but that in a year or 10 years hence, it may here be another 2½ per cent. for cash and then the present 2½ per cent. will have a historic basis, too. Then the foreign agents may come back on us and say, "We want a little bigger discount off the American list of machinery."

Now to be perfectly honest about the matter it seems to me that instead of the sales agents of the American Steel & Wire Company being considered very broad-minded in returning to a 2 per cent. discount for cash they have made a very great mistake. It seems to me that they missed a grand opportunity to impress upon machinery and supply people the necessity for doing away with the cash discount. I think dealers in the other cities, the local dealers, have a splendid opportunity to get together and do away with the cash discount. I do not believe that any law of this State or any authority in Washington would interfere with them in claiming their right to have the money for goods as they were billed, and not for a premium at the rate of 12 or 36 per cent. per year.

The Transportation Question.

J. W. Wright of J. W. Wright & Co., St. Louis, chairman of the Transportation Committee of the National Dealers' Association, read a report which he had previously submitted to his association. It was based on replies received to a communication addressed to each member of the association. A number of them expressed entire satisfaction with their railroad service; an equal number were not satisfied, but not disposed to complain; fully one-half, however, made bitter complaint because of aggravated delays and inconveniences. The report makes suggestions regarding measures to be taken to secure better service and recommends a resolution approving the Hepburn act and advocating laws placing stock and bond issues under Government supervision and making a fair appraisement of railroad properties.

FRIDAY AFTERNOON SESSION.

On Friday afternoon the executive session of the Manufacturers' Association was opened by the adoption of the report of the Joint Conference Committee concerning "Resale Prices." This report is printed in full in a previous column. It was decided to appoint the permanent Joint Conference Committee suggested in this report. This was left to the president of the association, with the restriction that he should choose three of the five members of the Executive Committee of the association. The permanent committee of the National Dealers' Association will consist of the following: L. J. Hammond of Strong, Carlisle & Hammond, Cleveland, Ohio; S. S. Bradley of Patterson, Gottfried & Hunter, Limited, New York; J. W. Wright of J. W. Wright & Co., St. Louis, Mo. The committee of the Southern Dealers' Association will consist of the following: W. G. Simmons of Kieth, Simmons & Co., Nashville, Tenn.; W. H. Bradley of the

Banks Supply Company, Huntington, W. Va., and H. P. Clarke of the Charlotte Supply Company, Charlotte, N. C.

The Election of Officers

of the three associations resulted as follows:

American Supply and Machinery Manufacturers' Association.—President, M. W. Mix of the Dodge Mfg. Company, Mishawaka, Ind.; first vice-president, Henry Sharpe of the Brown & Sharpe Mfg. Company, Providence, R. I.; second vice-president, L. D. May of the A. Leschen & Sons Rope Company, St. Louis, Mo.; third vice-president, E. H. Hargraves of the Cincinnati Tool Company, Cincinnati, Ohio. Executive Committee: Chairman, Charles F. Aaron of the New York Leather Belting Company, New York; J. H. Drury of the Union Twist Drill Company, Athol, Mass.; Henry R. Towne of the Yale & Towne Mfg. Company, New York; John Trix of the American Injector Company, Detroit, Mich.; J. W. Gardner of the Gardner Governor Company, Quincy, Ill.

National Supply and Machinery Dealers' Association.—President, George Puchta of the Queen City Supply Company, Cincinnati, Ohio; first vice-president, Henry Prentiss of the Prentiss Tool & Supply Company, New York; second vice-president, W. M. Pattison of the W. M. Pattison Supply Company, Cleveland, Ohio. Executive Committee: Chairman, Charles A. Strelinger of Charles A. Strelinger & Co., Detroit, Mich.; George T. McIntosh of the McIntosh Hardware Corporation, Cleveland, Ohio; Charles S. Farquhar of Chandler & Farquhar, Boston, Mass.; J. W. Wright of J. W. Wright & Co., St. Louis, Mo.

Southern Supply and Machinery Dealers' Association.—President, C. H. Briggs, of Briggs, Weaver & Co., Dallas, Texas; first vice-president, J. C. Miller of the Miller Supply Company, Huntington, W. Va.; second vice-president, E. A. Peden of the Peden Iron & Steel Company, Houston, Texas; treasurer, Alvin M. Smith of the Smith-Courtney Company, Richmond, Va. Executive Committee: Chairman, J. A. Riechman of the Riechman-Crosby Company, Memphis, Tenn.; John G. Christopher, Jacksonville, Fla.; A. D. Schofield of the J. S. Schofield's Sons Company, Macon, Ga.; Henry P. Clarke of the Charlotte Supply Company, Charlotte, N. C.

Entertainment Features.

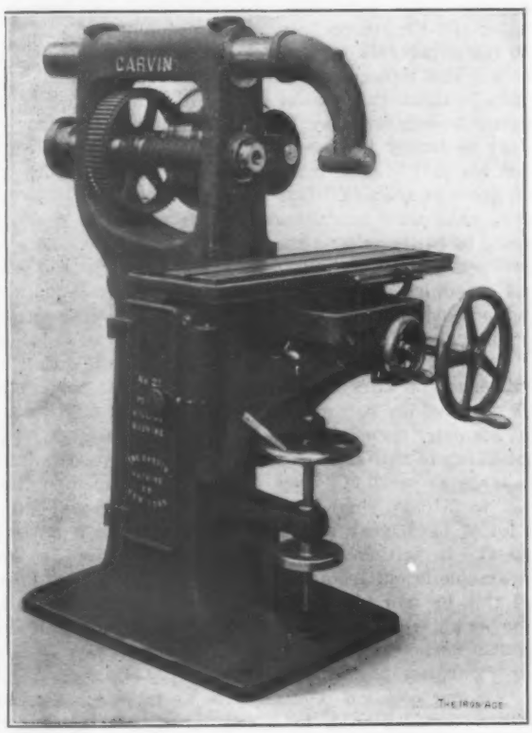
The local committee and ladies in charge of this portion of the programme acquitted themselves most creditably, with the result that while the men were at work their women folks were well entertained, being escorted to places of interest, theaters, &c. On Wednesday evening a boat ride up the Ohio River was provided, a collation being served on board and dancing being indulged in. The banquet on Thursday night was well attended and was a well arranged affair. George Puchta carried off high honors as toastmaster, filling the office most admirably. His sparkling wit was bright as ever, and all who know him will appreciate from this statement that it was superb. The speakers included T. James Fernley, secretary-treasurer of the National Hardware Association; Judge D. D. Woodmansee, Judge Judson Harmon, and W. M. Pattison.

An Export Duty on Russian Manganese Ore.—A petition has been presented to the Russian Ministry of Industry and Commerce by two important iron and steel companies—the Societe Russo Belge and the Societe Donetz Jouriefka—asking for an export duty on manganese ore. It is urged that such a duty would encourage the manufacture of ferromanganese and spiegeleisen in Russia, so that the manganese metals could be exported rather than the ore. There has been an overproduction of pig iron in Russia and export outlets are needed. The London *Iron and Coal Trades Review* points out that an export duty on Russian manganese ores would stimulate manganese mining in India and Brazil, which have been coming forward rapidly in this industry, with a constant diminution in the Russian percentage of the total output of manganese ores. A commission to inquire into the matter has been appointed by the Russian Government.

A New Garvin Plain Milling Machine.

The addition of a telescoping arm and the company's patented solid top knee are the principal features in the No. 21 plain back geared milling machine built by the Garvin Machine Company, New York City. The machine is illustrated herewith, and being equipped with back gears, is enabled to perform a wide range of heavy plain and gang milling for general manufacturing.

The spindle has a No. 10 B. & S. taper hole, runs in adjustable bronze boxes and is driven by a large, wide faced cone pulley. The knee, which, as before mentioned, is of the solid top design, has a broad face and forms a rigid box, affording sufficient stiffness to resist the side pressure of heavy cuts, to check the vibration set up by heavy coarse teeth cutters, and to prevent twist and distortion when handling overhanging work on the table. The telescopic arm is large and is well supported by a clamp front and back, and can be swung around or removed when desired. The outer end of the arm carries an improved cylindrical outboard bearing made of tool steel, hardened and ground, and is designed to give ample support and bearing surface for the cutter arbor. This form of bearing allows for the expansion of the arbor, while holding it perfectly firm.



The No. 21 Plain Back Geared Milling Machine Built by the Garvin Machine Company, New York.

The following are the more important dimensions:

Working surface of table, inches	6 x 30
Vertical adjustment under spindle, inches	13
Adjustment in line with spindle, inches	6½
Length of automatic table feed, inches	18
Greatest distance from end of spindle to outboard bearing, inches	13
Swing under arm, inches	9¼
Floor space required, inches	53 x 56
Approximate weight of machine and countershaft, pounds	1,700

The table has a large oil pan all around and a long bearing in the saddle. It is well fitted and is provided with a screw feed, automatic trip and quick return by the large hand wheel in the front, which affords an easy, rapid movement. The graduated wheel on the elevating screw saves time in setting the work and adds greatly to the convenience of the tool. Three speeds are obtained through the cone driving pulley, and these are doubled by the countershaft, so that there are six speeds in all, and three changes of feed are provided.

The Importance of Correctly Sized Gear Blanks.

BY C. E. CROFOOT.

In the days when cast gears were more commonly used insufficient attention was paid to determining their correct dimensions. This is strongly evident to those who now have to do with replacing them with more modern cast gears, or cut gears, figured on the diametral pitch basis. As long as the cogs would mesh sufficiently for the gears to revolve they were presumed to fit each other and answered the purpose. The writer has seen gears of about three diametral pitch that had been run together with a difference of 3-16 in. in their circular pitches.

It would seem that in conformity with the present trend toward mechanical perfection in most machine details there should be more care given to the correct sizing of the blanks, particularly since the design of a gear now embodies such considerations as economy of power and noiseless running at high speed, necessitating accuracy from the start. Unfortunately for the gear cutter and themselves also, many mechanics do not realize the importance of at least ordinary accuracy in this work. For replacement jobs the average mechanic appears to think that blanks turned like the old gears, no matter how much they may be worn, will somehow or other be cut by the gear man so that they will fit, and that his part is done when he sends the blanks with the old gears as samples. This is a great mistake. If no one is at hand who understands the laying out of gears, it would be better to send the samples and order for a complete set to a gear manufacturing concern, whose experts can determine at once whether they are worth duplicating, or ought to be laid aside for a more modern design.

In the turning of blanks for new work the following is a typical experience. The man in charge is furnished with a set of working drawings for a lot of new gears. He gets out his patterns and forgets to add anything to the diameter for shrinkage. Then, since the casting will not finish to full size, he instructs that they be finished as large as possible. They come to the gear man from 1-32 to 3-16 in. small in diameter. Perhaps the job is a lot of bevel gear blanks, and the machinist makes a mistake in setting the compound on his lathe and the face angle is out from one to three degrees. In spite of all this he will probably send them with such instruction as this: "Gears are to run at high speeds, and I want a first-class job," expecting the gear maker to comply regardless of incorrect blanks.

Another common occurrence is as follows: A manufacturer gets an order for a number of machines requiring from 500 to 1000 bevel gears of two sizes—say 2 x 3 in. pitch diameters, 6 pitch, 12 x 18 teeth. These must be turned out quickly. The machines are not high grade, and the gear work, it is assumed, is not very particular. The blanks are rushed through an automatic screw machine or turret lathe and sent to the gear firm with the instructions: "Delivery of the greatest importance—only ordinary work required." Imagine the proposition of cutting gears from blanks with holes varying from 0.005 to 0.02 in., backing distance from 0.01 to 0.03 in., with diameters and faces running out from 0.01 to 0.02 in. Stock arbors are made only in standard sizes, and a machine once set for a backing distance should remain so for the entire lot. It is true that there is a way to overcome almost any mechanical difficulty, but the work is delayed and extra expense is incurred.

Summing up the facts presented in the foregoing, there is found in the first case a lack of knowledge; in the second and third cases carelessness; and in the fourth uniformity sacrificed for quick work, with the mistaken idea that it does not make any difference and that the work is being rushed to advantage. Any or all of these influences may be enough to prevent the gear maker from turning out satisfactory gears. If purchasers would realize that it always pays to make gear blanks of correct dimensions, or otherwise have the gears made complete by a firm specializing on such work, they would obtain their work quicker, at a better price, and get much more satisfactory results.

Core Transportation in a Foundry.

BY H. M. LANE.

In a large plant the transporting of finished or baked cores from the storeroom or from before the core oven to the foundry floor is a problem which requires careful consideration. When an attempt is made to transport cores on any form of floor railroad the jarring of the trucks or cars in passing over the track is liable to break or injure the cores, and in a foundry it is practically impossible to keep track clean so that the cars will run smoothly. Then, too, the tracks are required for many other purposes and cannot be tied up in the transportation of cores.

Fig. 1.—Core Carrier Being Loaded in the Core Storage Department.

A very neat device for overcoming this difficulty, which has been introduced in a large foundry, is shown in the accompanying illustrations. In Fig. 1 a core carrier is shown suspended in the core storage department with a workman loading it with plates of cores. The carrier is a light pipe structure supported from an overhead trolley by spiral springs. Sufficient elasticity is thus secured so that there is no danger of the cores being broken by being jarred or shaken during transportation. Fig. 2 shows the core carrier after its arrival in the foundry where the workman is removing the cores and delivering them to the molders. It will be noticed that the regular shop railroad track runs on the foundry floor, and by observing the amount of sand on this track one

can readily realize what a shaking a carload of cores would get while traversing such a track.

When the manufacturer who built this device was requested to figure on it he was asked if he would guarantee it to work smoothly and to transport cores successfully. Acting in his usual conservative way he replied that he could not guarantee to transport cores without breaking them until the device had been tested. When it was installed it was found so successful that its use has been extended.

Attention is called to the fact that the racks for the storage of cores in the core department, shown in Fig. 1, are also made from pipe and pipe fittings. In this view the truck is shown suspended from the switch, which

Fig. 2.—Core Carrier Being Unloaded in the Foundry.

serves to transfer the truck to any one of three different overhead runways. No damage to cores has resulted in any way from turning corners or passing over these switches.

The Chamber of Commerce of Toledo, Ohio, has started a systematic and energetic campaign to secure new manufacturing plants, and in carrying out its purpose has issued an appeal asking all owners of sites, in or near the city, that are available for manufacturing plants, to list them with the chamber. A special committee is collecting a large amount of data that will be used as arguments in favor of the selection of the city as a location for various industries, and contributions and pledges will be solicited to aid in carrying on the campaign.

Healthful Conditions in Factories.

The Massachusetts State Board of Health has just reported the results of its investigation of conditions affecting the health of employees in factories. Attention was paid chiefly to those in which one or more of the essential processes involve exposure of the employees to possible unhygienic influences inherent to the industry. It is shown that the indoor occupations of chief sanitary interest are those which involve exposure to irritating and poisonous dusts; exposure to irritating, poisonous and offensive gases and fumes; contact with poisonous substances; extremes of heat and successive dampness.

Of the several classes of dust—those of vegetable, animal, metallic and mineral origin—it is difficult to determine which is the most irritating to the respiratory tract; but the vegetable dusts are commonly so regarded in spite of the well-known fact that the occupations in which the employees inhale minute particles of steel, glass and stone are remarkable for their high death rates from tuberculosis of the lungs. But not all the dusts of one class are equally irritating; flax and cotton, for example, are more irritating than wood; steel is more irritating than brass; horn is more irritating than bone; granite is more irritating than marble, and glass far more than granite.

Workers exposed to dusty atmospheres are especially prone to disease of the lungs, especially pulmonary tuberculosis, the constant irritation bringing about a condition of the mucous surfaces which more readily admits of invasion by the specific germs. Those who are exposed to poisonous dusts are, unless proper precautions are observed, likely to fall victims of chronic poisoning. The most dangerous of the metallic dusts met with in this investigation are those of lead and its compounds.

There is no reason why these conditions should persist, for this investigation very clearly shows that they can be overcome if mechanical means are adopted. In the form of the fan blower or exhauster such means are constantly referred to throughout the report as being successfully applied for the purpose. The entire report is wonderfully suggestive of the progress which is being made in thus improving the hygienic conditions in manufacturing establishments.

Much difficulty was encountered in the installation of a hydro-electric plant in Korea for the operation of mines. The mines are about 5 miles from the source of power, which is on a branch of the Yalu River and has been operated with steam power, using wood as a fuel. The scarcity of wood and the lack of a local coal supply caused a resort to water power and electricity. Satisfactory poles were not to be had; any wood obtainable was used and the bases charred, other methods of preserving not being available. The holes were dug by Korean labor, the poles erected by Chinese, and the ironwork done by Japanese. The equipment consists of a turbine operating under a head of 110 ft., directly connected to a 500-kw. 13,000-volt rotating-field three-phase alternator. The pipe line is 325 ft. long. Much of the equipment reached the site considerably the worse for wear, the transformers and other electrical apparatus being soaked with water and covered with ice. The plant was at length completed, and the results are said to be much superior to those previously obtained.

A. M. Castle & Co., Chicago, iron and steel merchants, have opened an office at 430 Citizens' National Bank Building, Los Angeles, Cal. The company's vice-president, A. H. Castle, will have charge of this branch.

Canada's Iron and Steel Interests.

Moose Mountain Ore and Toronto Steel Works.

TORONTO, May 11, 1907.—D. D. Mann of Mackenzie & Mann, the Toronto men who control the Canadian Northern Railway, stated in an interview on Thursday that the line now in operation between Toronto and Parry Sound would be completed to Sudbury by September. Only 50 miles of the track between Parry Sound and Sudbury remains to be built. The branch line from Sudbury to the Moose Mountain iron mines in Hutton Township is to be ready for use at the same time, being now completed apart from some additional ballasting. It may be recalled that the Canadian Northern interests have more than once publicly intimated their desire to assist in the development of these mines in connection with iron and steel works in Toronto. At a banquet given to Mr. Mackenzie and Mr. Mann by the Toronto Board of Trade last December, the former said that the road connecting Toronto with Hutton mines in the Moose Mountain District, 300 miles distant, would make the whole intervening territory tributary to Toronto; also that Hutton mines would be an important factor in building up an iron and steel industry in Toronto. He added that as the Northern Pacific interests had joined in establishing a plant at Port Arthur, based on Atikokan ores, in the same way they would take a hand in a steel works project at Toronto. It may now be said that the Mackenzie and Mann project of a blast furnace for this city is an old and unimportant story compared with that of another undertaking the same parties have in hand in the same relation. So far this undertaking has not quite emerged from its nebulous state, but if all the necessary connections are made Toronto will have a big steel plant.

Operations at Port Arthur and Loon Lake.

One of the earliest arrivals at Port Arthur this season was the steamer Hawgood with a cargo of coking coal for the Atikokan Iron Company. Other vessels are coming forward with coal. About 100,000 tons a year is required for the coke ovens and the blast furnace of the company. Coal for coke making was put on the free list at the last session of Parliament. A superintendent of the company's coke plant has been engaged, coming from the coke district of Pennsylvania.

As the spur line has been completed to the Atikokan Iron Company's mines, everything is ready for the movement of ore, which will come forward at the outset at the rate of 200 tons a day, increasing later. Mr. Rodda is the company's manager at the mines. A superintendent for the company's ore roasting plant has been secured from Wharton, N. J.

The Loon Lake iron mines in the vicinity of Port Arthur are to be busy this season. They are now the property of the Canadian Bessemer Ore Company, which proposes to get them at once into operation. Crushing and concentrating equipment will be put in. The ore will be put through a battery of rock crushers and rollers, then over Hancock jigs, for the purpose of separating the silica. Modern ore docks are to be built, and the steam shovel is to be used for loading. It is expected that 75,000 to 100,000 tons will be mined before the close of navigation. The output is to go down the lakes, but what proportion of it is for the Canadian and what for the American side are not generally known. R. J. Anderson, one of the Minneapolis members of the company, is quoted as saying that a carload of the ore had been tested with satisfactory results in an Eastern blast furnace. George Taylor is to be in charge of the company's work at the mines, where everything is said to be in readiness for an active season of production.

Electric Manufacture of Iron and Steel.

James Coumee, M. P., a Port Arthur man, and member for the constituency of which that city is a part, believes that the electrical manufacture of iron apd steel is bound to become a great industry in Canada, and he looks upon Port Arthur and Fort William as the logical center of such an industry. At the session before last he introduced into the House of Commons a resolution limiting the application of the bounties to iron and steel made in Canada from purely Canadian ore. His views as to the Government's electrical smelting policy and its possible fruits were recently published in a Port Arthur newspaper. He predicted that if the two cities acted energetically in the matter in 15 years the largest city in the Dominion of Canada would exist at the head of the lake. They have the ore close at hand, cheap water power and an advantageous market position, being on the threshold of the western prairie country with its constantly increasing demand, and having the economy of the waterway for the shipping of their products to eastern Ontario.

British Pig Iron Cargoes for Toronto.

Two cargoes of iron are on their way from England to M. & L. Samuel, Benjamin & Co., Toronto. This does not mean the beginning of a through service on ocean vessels between the United Kingdom and Toronto. Advantage was simply taken of the dispatch from the other side of two new steamers for the Canadian Lake Line and their space was utilized for the carrying of iron. The St. Lawrence canals would have to be cut much below their present 14-ft. depth to accommodate regular ocean freight carriers.

American Foundrymen's Association in Canada in 1908.

Already thought is being taken for the entertainment of the members of the American Foundrymen's Association at the convention which is to be held in Toronto a year hence. A meeting of the Executive Committee of the Toronto branch of the Canadian Manufacturers' Association on Thursday took action on the matter. L. L. Athes of the Toronto Foundry Company, Limited, is Canadian vice-president. There will be an exhibit of foundry equipment in connection with the convention. For this purpose Machinery Hall of the Toronto Exhibition will be used.

Industrial Notes.

The Canadian Department of Railways and Canals has contracts to place for rolling stock to the amount of $1,000,000, to be used on the Intercolonial Railway. The contracts call for freight cars and for 10 locomotives.

In a statement made in the closing days of the Parliamentary session, Mr. Fielding said that tenders for 80-lb. rails had been received by the Transcontinental Railway Commissioners from the Dominion Iron & Steel Company, the Algoura Steel Company, and the United States Steel Corporation. Contracts were awarded to the first named company for 23,000 gross tons at $34, and to the Algoura Steel Company for 10,000 tons at $34.50, delivered at Fort William. Some part of these contracts has been fulfilled, but no penalties will be imposed for failure to complete delivery within the specified time.

The City Council of Halifax has decided to give a free site of 12 acres to W. P. McNeil & Co., of New Glasgow, who are to build structural works employing 100 hands.

A tract of 28 acres has been selected in Sydney, Cape Breton, as the site of the rolling mills to be established there.

The two new 15-ton converters of the Dominion Iron & Steel Company appear to have satisfied the tests to which they have been subjected within the last few days. This is the second plant on the continent for the application of the duplex process, the others being operated by the Tennessee Coal, Iron & Railroad Company and the Colorado Fuel & Iron Company.

The Ontario Iron & Steel Company's plant at Welland is approaching completion. It will employ 500 hands.

I. L. Lafleur, Limited, has been incorporated to carry on generally the business of hardware merchant and ironmonger in Montreal. The capital stock is $80,000.

The Structural Steel Company has been incorporated to do business in the Dominion of Canada. The company is empowered to carry on bridge building, the erecting of iron and steel structural work, to manufacture structural steel, &c. The capital stock is $500,000, and the head office is to be in Montreal.

The large enameling works of the Amherst Foundry Company, Amherst, N. S., were destroyed by fire several days ago. C. A. C. J.

Charles H. Haswell.

Charles Haynes Haswell, the famous engineer, who would have been 98 years old if he had lived but 10 days more, died, May 12, from a fall in the dining room of his home in New York City. He was known as the dean of the profession of civil engineering the world over. Up to the time of this accident Mr. Haswell, in spite of his nearly 100 years, was in good health and a regular worker, in charge of important city construction work.

He was born May 22, 1809, in New York City. At the age of 19 years he finished the usual classic education and entered the profession whose growth he was destined to follow from its small beginnings to its present importance, as no other man has done. He got a job about 1829 in the boiler works of James P. Allaire. From this Mr. Haswell was chosen for the work of United States naval engineer in 1836. After serving for some time as chief engineer he received, in 1845, the formal title of engineer in chief. This rank he was the first to attain and he held it until 1851. During those years were performed his most valuable services to the navy. They included the designing of all the machinery for 10 ships, the introduction of several mechanical improvements and the bringing of the early steam navy to a condition of higher efficiency.

CHARLES H. HASWELL.

Following his retirement from the navy, Mr. Haswell engaged in engineering practice in New York. For over 40 years he was surveyor of steamships for the marine underwriters of New York; he designed and located the buildings on Hoffman Island; he built the crib bulkhead at Hart's Island; he dug what at the time were the most extensive and problematic building foundations in the city. Such works, and others of a local character, kept him busy even to the time of his death. He yet leaves uncompleted the extensive construction and improvement at Riker's Island, which occupied him for several years past. As lately as during the winter of 1905-1906 he went out in bitter winter weather several times a month to supervise personally the work there carried on. He held, at the time of his death, in addition, the post of consulting engineer to the Board of Apportionment. He not only held the post, but performed its duties.

As an engineer his achievements were such that he might have retired with high honors a generation ago. Earliest among his claims to note was his launching of the first "steam yacht." He launched the craft in 1837 on the East River, where her maiden trip was cheered by thousands. Besides construction work, Mr. Haswell was the author of two books. One, "Haswell's Mechanics' and Engineers' Pocket Book," is known the world over, has passed through 71 editions, and is now in its one hundred and forty-sixth thousand, being still in use as a compact engineering reference book. His other work was the "Reminiscences of an Octogenarian," a book of memoirs covering the old New York from 1816 to 1860.

There was another side to Mr. Haswell's personality that will cause him to be remembered by the present generation, and with an affection that could not be merely the outgrowth of his work. He had a singularly wide acquaintance. Fond of society, he was a frequenter not only of his clubs, but also of his church, and a sharer in its activities. He leaves a married daughter and three sons.

Ruling on Freight Rates on Southern Iron.

WASHINGTON, D. C., May 14, 1907.—The Interstate Commerce Commission has handed down a decision in the case of the Tomlin-Harris Machine Company *vs.* the Louisville & Nashville Railroad Company *et al.* in favor of the complainant as to pig iron, but dismissing the complaint as to coal. The conclusions of the commission are based upon the principle recently enunciated by the United States Supreme Court that competitive shipping points are entitled to lower rates than noncompetitive points for equal service, and that such rates should be proportionate as to commodities of the same or similar classifications.

The complainant, a corporation, is engaged in the operation of a foundry at Cordele, Ga., 65 miles south of Macon, and located on the lines of the Seaboard Air Line, the Atlanta, Birmingham & Atlantic, the Albany & Northern and the Georgia Southern & Florida railroads. Complaint is made that the rates charged by the defendant carriers for the transportation of pig iron and coal in carloads from Birmingham, Ala., to Cordele, Ga., are "excessive, unreasonable and discriminatory," being $2.75 per gross ton on pig iron and $1.70 per net ton on coal. These rates, it is alleged, subject the complainant and other manufacturers of iron in Cordele to an unreasonable disadvantage in favor of Macon, Ga., to which the rates on the same articles from Birmingham are $1.65 per gross ton of pig iron and $1.60 per net ton of coal. The distance from Birmingham to Macon over the shortest rail route is 254 miles, and from Birmingham to Cordele is 252 miles. The joint tariff of the Louisville & Nashville, Seaboard Air Line and Georgia Southern & Florida meets the rate on the other and shorter lines upon coal and pig iron to Macon, and upon such haul carries these commodities through Cordele, charging the same rates to Macon as are charged by carriers reaching that city by more direct routes and charging the higher rates as above given to Cordele.

In stating its conclusions the commission quotes from the decision of the United States Supreme Court in the case of the East Tennessee, Virginia & Georgia Railway *vs.* Interstate Commerce Commission, in which it was said that "the competition which is real and substantial and exercises a potential influence on rates to a particular point, brings into play the dissimilarity of circumstances and conditions provided by the statute and justifies the lesser charge to the more distant and competitive point than to the nearer and noncompetitive place, and that this right is not destroyed by the mere fact that incidentally the lesser charge to the competitive point may seemingly give a preference to that point and the greater rate to the noncompetitive point may apparently engender a discrimination against it." In conclusion the commission says:

> Macon has an advantage over Cordele in lying some distance nearer to the coal fields and the iron furnaces of northern Georgia and Tennessee. These fields and furnaces, it appears, compete with those of Birmingham for the trade of central and southern Georgia. From all the facts and the evidence adduced the rate on coal to Cordele cannot be held to be either unjust, unreasonable or discriminatory, or in violation of any of the provisions of the act to regulate commerce, and the petition of the complainant as to the rate on this commodity is ordered dismissed. From the facts before the commission and all the evidence presented at the hearing it further appears, that the rate upon pig iron from Birmingham to Cordele is unjust and excessive, and that $2.15 per ton of 2240 pounds would be a just and reasonable rate for the transportation of such commodity, and an order will issue to this effect. W. L. C.

THE IRON AGE

1855—1907.

New York, Thursday, May 16, 1907.

Entered at the New York Post Office, as Second Class Mail Matter.

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CHARLES KIRCHHOFF, - - - - - - - EDITORS
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The Outlook for Pig Iron Production.

The publication of the May blast furnace statistics of *The Iron Age*, showing that the pig iron industry entered the month with the largest active capacity in its history, has sharpened interest in a situation which both producers and consumers are watching most intently. The question is being asked whether production is likely to increase sufficiently to ease the tension in the pig iron market. So many factors enter into such a calculation that a categorical answer would be unsafe. However, some developments since the opening of the month throw additional light on the situation. These point to a further increase in production.

The weekly capacity of the 323 furnaces active May 1 was 523,912 gross tons, as against 497,456 tons for 313 furnaces April 1. We estimate that of the 26,000 tons a week increase, 11,000 tons was contributed by merchant furnaces. Of 22 furnaces out of blast for repairs at the end of April we count 8 that have resumed since that date—Soho in the Pittsburgh District (May 1), Calumet in the Chicago District, one Saxton in western Pennsylvania, one Hubbard in the Mahoning Valley, Globe in the Hanging Rock District, Furnace I at Edgar Thomson, Rockdale in Tennessee (scheduled for May 15), and Hamilton in the Hanging Rock District (scheduled for May 15). Two new furnaces have blown in since the beginning of the month—F of Colorado Fuel & Iron Company and the new Mayville, Wis., furnace of the Northwestern Iron Company. Of furnaces scheduled to go in before June 1 or about that date, are two Bessemer stacks of the Tennessee Coal, Iron & Railroad Company, Milton in the Hanging Rock District, the new Etowah Furnace of the Alabama Consolidated Coal & Iron Company, Gadsden, Ala., and Mayville No. 1 of the Northwestern Iron Company, now out for relining. About June 15 the new Erie, Pa., furnace is expected to blow in. Of furnaces reported to have gone out since May 1 are Pequest in New Jersey and Dover in Ohio. Taking merchant furnaces alone, the additions to the active list since May 1, less the capacity of merchant stacks known to have gone out, represent a net increase in production of about 5500 tons a week.

No calculation is possible concerning the number of furnaces that will be blown out. In April only 4 stacks went out for relining, against 17 in March, 7 in February and 10 in January—a very material reduction from the average of the three preceding months. The past year has been marked by a large amount of repair work and relining, and the average of stoppages may for a time run somewhat less. However, it is to be considered that many furnaces have held on beyond the ordinary time for repairing, in view of the pressure upon them from consumers. As against 323 coke and anthracite furnaces active on May 1, the 22 under repair represent but 6 1-3 per cent. of the total, or considerably less than the ordinary.

Of the 387 coke and anthracite furnaces carried on *The Iron Age* list 34 may be counted as out of the race (a few being alternate stacks of furnaces in blast), since they have not been active at any time in the past two years of unprecedented demand at good prices. It will thus be seen that in addition to the 323 active furnaces on May 1 and the 22 out for repairs, there is a margin of but 8 stacks, these being members of the long idle class about which there have been some proposals for resumption. From the blowing in of new furnaces no large additions to output are to be expected in the near future. In the merchant list are the new Erie, Pa., and the new Gadsden, Ala., furnaces, while the steel works additions are represented by the two new Carrie stacks. After middle June, when all four of the above will probably be going, further new furnaces are not to be expected to go in before September, when the first of the two new Duquesne stacks may be started. Probably by the end of the year both these stacks, as well as the new Lorain, Ohio, the new McKeesport, Pa., and the two new Youngstown, Ohio, furnaces of the Steel Corporation, each with an average capacity of 13,500 tons a month, will be making iron. Gary is not counted on to be a pig iron producer before 1908. The outlook is thus for an increase of 1,250,000 tons a year in the rate of pig iron production by the Steel Corporation before the close of 1907. Other steel companies, with the exception of the Tennessee Company, which will have a new Ensley furnace ready in July, are not likely to add much to their pig iron output this year.

The reasonable expectation for the future of pig iron is a moderate increase in both merchant furnace and steel works production in the next few months, culminating in important additions of steel making iron in the latter part of the year. It may turn out, however, that these developments within the trade may prove to be less important as determining factors than some originating from without which will have an important bearing on the volume of consumption.

A Stable Iron Market for the Steel Founder.

A change is occurring in the alignment of the pig iron market which may have an influence upon the competition between gray iron castings and steel castings. While producers of both classes of castings depend upon the open market for their supplies of pig iron, prices of the different grades of pig iron show market movements independent of each other. The steadiness with which the steel mills have been holding the prices of their products in the past few years has been reflected in the markets for Bessemer and basic pig iron, which have fluctuated less in price, relative to other grades of pig iron, than they formerly did. The steel market has exercised a direct influence upon steel making pig iron, and while this in turn has influenced foundry and forge grades the controlling influence of the steel market is much more remote with foundry and forge grades than it is with Bessemer and basic pig iron.

Other influences have also been at work. Consumers of foundry pig iron are more scattered than consumers of steel making pig and are more likely to put the market up on themselves in times of natural advancing tendency and more likely to depress it unduly when current indications have the opposite coloring. Producers of steel, whether for rolling or casting, are under greater obligations, through the size of their investments, to run steadily. Then, also, it appears that the merchant furnaces which produce steel making pig iron show a greater

desire to hold their market steady than do, in the main, the merchant furnaces which make a specialty of foundry grades.

The erection of merchant blast furnaces has not kept pace with the growing needs of the industries which should be their natural outlet. In the two years 1905 and 1906 new blast furnaces were blown in with a rated capacity of about 2,750,000 tons a year, but of this a trifle less than one-fifth was merchant capacity. Of the new furnaces blown in since January 1 last, or now being built, only about one-eighth comprises merchant furnaces. The proportion is especially low, partly by accident, since of the nearly 5,000,000 tons of new capacity introduced since the first of this year, or under way, a large part is contributed by the Gary plant of the Steel Corporation and the Aliquippa plant of the Jones & Laughlin Steel Company. Still, it is a remarkable showing that of nearly 5,000,000 tons of new capacity, only about 650,000 tons is attributable to merchant interests. The proportion of actual production by merchant interests has been quite different from the proportion of recent undertakings, being a trifle in excess of one-third.

The relatively greater steadiness which has prevailed in the market for steel making pig iron appears the more remarkable when it is considered that this branch of the pig iron market has been subject to much more disturbing influences, from the natural course of industrial development, than has the market for foundry pig iron. It is but a few years ago that the large steel works were the chief and almost the only buyers of Bessemer and basic pig iron in the market. A number of them have dropped out, while others have appeared. Then the rise of the steel casting industry has been remarkable. From being scarcely considered as a market factor the steel casting producers have become an important dependence of the producers of Bessemer and basic pig iron. There have been most remarkable shifts in the destination of the steel making pig iron, which is produced by the merchant furnaces, and yet their market has been held with considerable steadiness. It is quite safe to assert that if the foundry iron trade had had to experience these shifts, in addition to the troubles which it has always had with it, it would have fluctuated much more even than it has.

The changes in this direction have not altogether run their course yet. A number of the steel works which have within the past twelvemonth been large buyers of merchant pig iron have dropped out or will curtail their purchases within a year, while the demands of the steel casting plants are growing steadily. We hear no fears expressed that the demand for steel making pig iron will decrease; the only worry of producers at the present time is to make the iron hold out and keep the market with some semblance of steadiness as the demands of the different interests overlap.

The market for steel making pig iron is working its way to a position where it will be able better than ever before to avoid extreme fluctuations. Not as much can be said of foundry iron. While Southern iron has not always set an example of steadiness, it can hardly be denied that the curtailment of the amount of iron sent North, through the growth of steel making in the South, will not have a tendency to steady the pig iron markets of the country.

Whatever may have been the cause, it does not seem that the production of foundry pig iron has kept pace with the needs of the country, despite the fact that the steel casting has been making inroads upon fields formerly occupied exclusively by the gray iron casting. The statistics of total pig iron production showed a gain from 1905 to 1906 of 2,314,811 tons, but the gain in Bessemer and basic pig iron was more than this, so that the production of all other grades of pig iron decreased by 32,086 tons, and if the increase in manganese metals be taken into account a somewhat greater decline is observed in the remaining grades. Foundry iron is likely, however, to give a better account of itself this year. Our blast furnace statistics show that the merchant furnaces (excluding charcoal) have averaged about 785,000 tons per month this year, while in the first half of last year they averaged 723,000 tons and in the second half 724,000 tons. These figures are adjusted to a month of average length, so that they are not subject to allowance for the vagaries of the calendar. The total production of coke and anthracite pig iron in the first four months of this year has been at a rate of 131,000 tons a month in excess of the production last year. The merchant furnaces have been contributing nearly one-half of this gain, when in 1906 they showed a loss over the preceding year. The increased pace was shown better in January and February than in March and April. In the following table monthly outputs are shown of coke and anthracite pig iron, adjustments being made to the returns we have printed to allow for the different lengths of month, the figures for February and April being increased, and those for January and March decreased, to bring the showing to that for an average month of one-twelfth of 365 days:

	Steel works furnaces.	Merchant furnaces.	Total.
January	1,379,930	784,171	2,164,101
February	1,431,678	789,898	2,221,576
March	1,398,015	785,285	2,183,300
April	1,466,883	780,461	2,247,344

Thus the steel works furnaces produced 35,000 tons more pig iron in April than in February, while the merchant furnaces produced almost 10,000 tons less; the steel works furnaces produced 18,000 tons more in March than in January, while the merchant furnaces produced the same tonnage.

When the proportion of merchant Bessemer and basic pig iron purchased by the regular steel works decreases further, and the proportion purchased by steel casting plants increases further, the market will be still steadier. The foundry iron market holds out no such promise. The advantage of being able to figure more accurately upon probable costs, in making long time contracts for steel castings, than for iron castings, cannot but inure to the benefit of the steel casting in the competition it is giving the iron casting.

Fictitious Requests for Quotations.

It is charged that the practice is growing of asking manufacturer or dealer to quote prices when there is no intention of placing business. A typical complaint is that a manufacturer goes to the competitors of a concern from which he is buying and gets their prices, which he uses for driving a better bargain without breaking existing relations. The labor of the competitors is wasted, they assert. The inquiries are not made in sincerity. Doubtless such means as these are employed to a certain extent and always will be. It is to be doubted if the practice is on the increase, though from the way modern business is organized it is perhaps natural that it should seem to be more prevalent than formerly.

The modern purchasing department is probably to blame for the suspicion. It naturally wishes to make as good a showing as possible. Its constant effort is to keep down costs without reducing the standard of excellence of raw material and equipment. This means close and intelligent buying. The purchasing agent must keep him-

self in intimate touch with the market and with those houses that supply the goods he must buy. He maintains detailed records, if his system is a good one. Market prices and conditions are carefully studied, and useful information is filed for reference. In his efforts to keep informed prices must be asked without intention of immediate buying. He may have to put a check on the figures of some concern, whose goods have been specified by the manufacturing end of the business, and which will be ordered if the prices are right. In determining the cost of contemplated improvements it is necessary to make a great number of inquiries, in order that an intelligent estimate may be obtained, and no such request carries with it any assurance of business. In fact, the whole project may be abandoned. Other reasons for tentative requests for information are constantly arising, so that altogether a great many letters of this sort go out to the trade, never to be heard from again. Yet they were written in good faith. This may not always be said of the purchasing department conducted according to modern ideas, but it is a general rule, nevertheless. The percentage of inquiries for prices intended with some purpose ulterior to actual business is so small that every request for quotations should be regarded as containing real value. If a certain make of goods has been specified by the works, a competitor is given the information, or a clue, which in time may mean the substitution of his own goods.

A prominent manufacturer recently remarked that a sales department that is always looking for an inquiry representing a competitor's attempt to procure information, or the fruitless "shopping around" variety, must finally become a handicap to the business. The competitor usually finds little trouble in learning all that he needs regarding prices. Moreover, the "shopping around" letter may unexpectedly develop good business. A system of carefully recorded inquiries and resultant orders, such as many sales departments maintain, will demonstrate this. The instances may not be many, but their percentage is surely sufficient to balance any expense of fruitless answers to inquiries. There is always the element of advertising in the opportunity to quote prices and to set forth details of a line of goods, no matter what it may be. The man who asks for prices merely to influence the quotations of another house, may learn from his answers that he would be benefited by a change. So while there may be an occasional exception to the rule, enterprising business houses usually consider that all inquiries should be treated alike, providing the business would be accepted if tendered.

The German Tariff Convention.

WASHINGTON, D. C., May 14, 1907.—Exporters in all lines, including certain manufacturers of machinery who have been able to sell their products in Germany, have addressed numerous inquiries to the State and Treasury departments during the past week to ascertain the practical effect of the withdrawal after July 1, 1907, of the conventional rates of the new German tariff, which have been extended to American products since March 1, 1906. With a view to furnishing this information as far as it affects exporting manufacturers of iron and steel and other metals, a table has been prepared covering the imports into Germany from the United States for the 10 months from March to December, 1906, both inclusive, of the articles which, after the beginning of the new fiscal year, will no longer enjoy the minimum duties. This table is based upon statistics furnished by the German Government, in which weights only and not values are given. It is to be regretted that values are not here presented, but it is probable that they will be available at an early date, and in the meantime exporters will find fairly satisfactory information conveyed by the figures presented below:

Imports Into Germany from March 1 to December 31, 1906, of American Metal Products as to Which the Conventional Tariff Rates Will Be Withdrawn July 1, 1907.

		*Metric cwt.
794.	Tubes, rolled or drawn, 2 mm. or more in thickness	3,784
798c.	Malleable cast iron weighing net per piece 3 kg. or less	4,311
798d.	Other malleable cast iron wares	860
799b.	Parts of agricultural implements, &c.	1,782
799d.	Miscellaneous parts of machinery	1,307
799g.	Stoves, ovens, radiators, &c.	3,193
812a.	Files and rasps not more than 16 cm. long	125
812b.	Other files and rasps	242
813a.	Drills, &c.	629
813c.	Machine knives	1,456
814a.	Broaches, gimlets and cutting files	280
814b.	Measuring tools	60
828c.	House and kitchen utensils of sheet iron, enameled, &c.	284
879.	Copper, tombac and brass wares	360
895.	Knitting machines to be worked by hand; top parts of knitting machines; also parts thereof except needles	219
896.	Knitting machines on stands, or to be driven by motors	48
902b.	Machines for washing and chemical cleaning	2,160
904a.	Machines for working metal	41,689
904b.	Machines for working wood	1,819
904c.	Machines for working stone	122
906c.	Lawn mowers and agricultural machinery not elsewhere specified	1,482
906b.	Brewing machinery	977
906h.	Sugar making machinery	5,310
906k.	Machines for making cellulose and paper	355
906l.	Pumps, water lifting and freezing machines	702
906m.	Elevators, including those with electric motors	647
906n.	Book printing machines	1,421
906q.	Blowing and ventilating machinery, including that attached to electric motors	1,228
906r.	Machines for the leather and shoe industry	4,356
906t.	Other machines not elsewhere specified (machines for polishing glass, &c.)	1,606
912c.	Electrical instruments for medical and dental instruments and parts thereof	4
919.	Parts of cycles of iron	109

* One metric cwt. = 220 lb.

Additional Minimum Rates to Be Withdrawn.

Several minor discrepancies have been discovered in the statement made public last week showing the articles of American production as to which the minimum rates will be withdrawn on and after July 1, and a few items omitted by the compilers have been added to this category. While they will not affect our export trade in any important particular, they are here presented with a view to completing the exhibit given in these dispatches last week. They are as follows:

Paragraphs 801 and 802.—Under these two paragraphs steam boilers of malleable iron, together with collected parts of the same and boiler fittings, when designed for ships, are now free of duty, but on and after July 1 will pay rates ranging from 5 to 8 marks per 100 kg., according to size. No articles under this classification were exported to Germany from the United States in 1906.

Paragraph 814.—This paragraph levies a general tariff rate of 40 marks per 100 kg. on broaches, gimlets, cutting files measuring tools, &c., and a conventional tariff of 28 marks on broaches, gimlets and cutting files. The exports to Germany of these products of American manufacture during 1906 amounted to 28,000 kg.

Paragraph 856.—Zinc sheets of 0.25 mm. or less in thickness pay 4.50 marks per 100 kg. under the general tariff and 3 marks under the conventional tariff. No imports from the United States were made under this paragraph in 1906.

Paragraph 866.—Nickel wire pays a general tariff rate of 15 marks per 100 kg. under this paragraph and a conventional rate of 14 marks. There were no imports into Germany of American products under this paragraph in 1906.

Paragraph 879.—Copper, tombac and brass wares, varnished in imitation of gilding, colored or nickeled, pay a general tariff rate of 60 marks per 100 kg. under this paragraph, but nickel frames and clasps, &c., of sheet brass for cigar cases, leather cases, purses, hand bags, traveling bags and similar bag makers' wares pay a conventional rate of 50 marks. The imports of these goods into Germany from the United States in 1906 amounted to 36,000 kg.

Paragraphs 898, 899, 900, 901 and 902.—These paragraphs cover textile machinery, which is made in large part of wood. The conventional rates range from 10 to 20 per cent. less than the general tariff rates. There were no importations of American products into Germany under these paragraphs in 1906.

W. L. C.

The Steel Rail Problem.

Newspaper discussion concerning steel rails has continued during the past week and has been characterized by the same looseness of statement to which attention has already been directed in these columns. One of the financial writers commenting on a development in the market for iron and steel stocks early this week, spoke of slight weakness "under sales seemingly prompted by the discussion now in progress concerning the poor quality, as is alleged, of the steel rails turned out by companies using the modern Bessemer process of manufacturing the article." Another paper spoke of the proposed return to the "old-time open hearth process of manufacturing rails," and of the unsatisfactory results of the "modern Bessemer process."

Unwittingly the writer of this latter article revives recollection of the small output of open hearth rails made in the United States for a number of years. In fact, in the late seventies and early eighties, when chemical specifications for steel rails were little in evidence, and when the question of inferiority or superiority as between open hearth and Bessemer rails was never raised, the statistics showed some thousands of tons a year of open hearth rails. The annual reports of the American Iron and Steel Association give the output of such rails for a period of years, beginning with 1879, as follows:

Open Hearth Rails in Earlier Years.

Year.	Gross tons.	Year.	Gross tons.
1879	8,169	1884	2,384
1880	12,156	1885	4,280
1881	22,515	1886	4,692
1882	20,326	1887	17,149
1883	8,202	1888	4,697

In the period covered by the above figures the output of Bessemer steel rails ranged from 1,000,000 to 2,000,000 tons, the high point being reached in 1887. That the possibility of any competition between the two processes in rail manufacture was not entertained at that time is evident from this comment, which appears in the report of the American Iron and Steel Association issued under date of May 1, 1884:

> No special significance attaches to the decreased production of open hearth steel rails in the last two years, as open hearth steel will never be a competitor with Bessemer steel in the manufacture of rails.

The output of open hearth rails was inconsequential from 1888 to 1903. In the latter year the total, which was 2093 tons in 1901, and 6029 tons in 1902, rose to 45,054 with the starting up of the Tennessee Coal, Iron & Railroad Company's mill at Ensley. In 1904, the total was 145,883 tons, in 1905 it was 183,264 tons, and in 1906 over 200,000 tons.

In the past week the attitude of the Harriman lines, whose position respecting rail prices and rail specifications has been one of protest for some years, was emphasized by two developments. One was the placing of contracts for 150,000 tons of open hearth rails; the other was the reading of a letter concerning rail breakages at the meeting of the directors of the Union Pacific Railroad. The letter was addressed to President Harriman by J. Kruttschnitt, the Union Pacific director of maintenance and operation, and said that 449 broken rails had been discovered on the Union Pacific line in February last, 179 of the number having been 90-lb. rails. Mr. Kruttschnitt suggested that Mr. Harriman personally bring the matter to the attention of the directors of the United States Steel Corporation.

A Case with Two Sides.

There is reason to believe that the method of attack employed in some of the publications of the past few weeks is not sanctioned by railroad officials of prominence. They have too thorough an appreciation, not only of serious import of some of the sweeping assertions made, but of the extent to which the railroad practice of recent years is involved, to want to try so important and many sided an engineering problem in the public press. Where railroad men high in authority and steel men qualified to speak for their companies have soberly taken up the question of rail failures, there has been nothing of heated accusation, but a realization that all the light is wanted that either side can throw on the subject.

Railroad engineers admit the accumulating severity of the service to which rails have been subjected. A computation made in the case of one important line showed that while driving wheel loads had increased more than 49 per cent. in a given time, the increase in the weight of rails laid had been but 16 per cent. Last year, when the Rail Committee of the American Society of Civil Engineers presented its report it was stated that in general, while the increase in driving wheel loads of the country had been approximately 60 per cent. since 1893, when the civil engineers' rail specifications were adopted, the increase in maximum weight of rails had been from 80 lb. per yard to 100 lb. per yard, or 25 per cent.

In the interchange of views had in the past year between individual railroads and individual rail makers there has been no disposition on the part of the railroads to ignore the fact that rails in service in the past year or two have been subjected to the culminating effect of all the increase in engine weights, in car weights, in train loads and in speed that have marked more recent railroad practice, accented by demands of a time of high pressure operation. There has been no effort, however, to conceal the fact that badly balanced driving wheels and the poor condition of rolling stock have had their part in the rail breakages of the past six months.

Changes Proposed.

Nothing has been said in recent sensational articles on rails, of the improvement in rail quality that has resulted from the initiative of steel works and railroad engineers, apart from the work of various association committees. The railroads have been pressing constantly for higher carbons. In view of the large number of breakages, the conviction is spreading that the high carbon campaign may have been carried too far. The Bessemer rail mills have been turning out 90 and 100 lb. rails of 0.50 and 0.60 carbon, with 0.10 phosphorus, while the Tennessee Coal, Iron & Railroad Company's open hearth specification provides 0.58 to 0.68 carbon in 90 to 100 lb. rails, with 0.06 phosphorus. The Civil Engineers' Committee report called for 0.55 to 0.65 carbon, with 0.085 phosphorus in Bessemer rails, and 0.65 to 0.75 carbon with 0.05 phosphorus in open hearth rails. The Pennsylvania Railroad represents the extreme of the high carbon movement in announcing that the open hearth rails which it expects to buy as soon as the mills are prepared to furnish such rails, must have 0.80 to 0.90 carbon for 90 to 100 lb. rails, and 0.03 phosphorus.

That there is even now a disposition on the part of some roads to prefer more rapid rail wear to the dangers of brittle rails appears in the reduction in their carbon specification in the past year. Rails are now being rolled, for example, to meet a 0.42 to 0.45 carbon requirement, as against 0.50 and 0.55 carbon furnished the same road last year. This counter current to the high carbon tendency has been entirely ignored in the recent newspaper discussions. It is not without significance, however, in connection with the opinion apparently entertained in some railroad quarters that the chemical properties of the open hearth rail are a panacea for the ills recently complained of.

That a heavier rail, one running 110 to 120 lb., designed on new lines must be provided to meet present day service requirements, is the opinion of some rail mill as well as railroad engineers. New sections have been brought forward recently and are now under consideration, giving a heavier flange, a somewhat narrower rail base, and such a distribution of metal as shall minimize the difference in the rate of cooling of the head and flange of present sections on the hot beds of the mills. The majority of the breaks recently reported have been in the flange of the rail. It is believed that a change in the contour of the base of the rail, giving a slight convexity of that surface will result in a greater resistance to compression.

The Railway Association Committee.

At the recent Chicago meeting of the American Railway Association, the Committee on Standard Rail and

Wheel Sections reported that it had appointed a subcommittee to draft rail specifications to form the basis of a discussion of the whole question with steel manufacturers. G. L. Peck, general manager of the Pennsylvania lines west of Pittsburgh, is chairman of the committee. No appointment for a conference with the manufacturers has yet been made, but it is understood that such conference will be welcomed by the steel companies, and that their engineers are prepared to suggest remedies for the conditions recently emphasized. A starting point of agreement in such a conference is the admission that steel rails now in track are being subjected to both use and abuse such as they were never intended to withstand.

The General Electric Company's Report.

In submitting to the stockholders the fifteenth annual report of the General Electric Company, covering the operations of the fiscal year ending January 31, 1907, President C. A. Coffin calls attention to the handsome growth in surplus from the year's earnings. Continuing, he says:

"The sales billed by the company to its customers for the past year were nearly $17,000,000 more than for the previous year, showing an increase in shipments of about 40 per cent. The sales billed for the first two months of the present fiscal year are more than 50 per cent. greater than last year. Should this growth in business continue, additional capital will be required."

Financial Statements.

From the reports of the treasurer, Henry W. Darling, and the general auditor, Edward Clark, the following financial statements have been compiled:

INCOME ACCOUNT.

	1907.	1906.
Total sales for year ending January 31	$60,071,882.99	$43,146,902.42
Expenditures and depreciation	53,106,594.04	37,025,346.61
Profits on sales	$6,965,288.95	$6,121,555.81
Receipts from royalties, dividends and interest	532,246.19	1,099,320.82
Profit on sales of securities	329,702.55	173,389.52
Net profits for the year of security holding companies	675,000.00	.....
Total income	$8,502,237.69	$7,394,266.15
Interest on debentures	74,395.01	75,105.54
Net profit for the year	$8,427,842.68	$7,319,160.61
Patents written off	999,999.00	1,000,000.00
Balance for dividends	$7,427,843.68	$6,319,160.61
Dividends paid	4,344,342.00	3,861,062.00
Balance to surplus	$3,083,501.68	$2,458,098.61
Surplus previous year	12,027,295.09	9,569,196.48
Total surplus	$15,110,796.77	$12,027,295.09

CONSOLIDATED BALANCE SHEET AS OF JANUARY 31.

Assets.

	1907.	1906.
Patents, franchises and good-will	$1.00	$1,000,000.00
Cash	3,910,708.85	6,356,093.77
Stocks and bonds	20,086,790.08	19,104,539.30
Real estate (other than factory plants)	347,488.93	359,013.86
Notes and accounts receivable	22,863,788.76	16,287,018.01
Advances to affiliated companies	2,022,675.57	.....
Work in progress	3,853,321.23	2,496,205.78
Merchandise inventories:		
At factories	19,680,242.89	14,983,710.46
At general and local offices	2,672,152.60	1,782,678.47
Consignments	241,511.64	155,901.91
Discounted paper	666,607.65	.....
Factory plants	9,000,000.00	8,000,000.00
Totals	$86,245,289.20	$70,525,161.56

Liabilities.

3½ per cent. debentures	$2,047,000.00	$2,047,000.00
5 per cent. debentures	55,000.00	55,000.00
Accrued interest on debentures	458.34	458.33
Accounts payable	4,010,410.58	2,106,863.89
Unclaimed dividends	1,465.86	1,794.25
Capital stock issued	63,572,800.00	54,286,750.00
Subscriptions on account of capital stock, an equal amount being payable April, 1907	780,750.00	.....
Indorsements	666,607.65	.....
Surplus	15,110,796.77	12,027,295.09
Totals	$86,245,289.20	$70,525,161.56

CONSOLIDATED BALANCE SHEET OF AFFILIATED COMPANIES AS OF JANUARY 31.

Assets.

	1907.	1906.
Property accounts	$4,708,743.95	$3,089,539.61
Patents, franchises and good will	5.00	32,004.00
Current assets:		
Merchandise, material and supplies	3,749,609.62	2,714,296.08
Work in progress	338,521.82	175,392.30
Notes and accounts receivable	2,032,467.77	1,430,123.15
Stocks and bonds	17,085.54	66,559.48
Cash	242,065.69	373,213.91
Totals	$11,088,499.39	$7,881,128.53

Liabilities.

	1907.	1906.
Capital stocks	$6,315,000.00	$6,185,000.00
Bonds	135,000.00	.....
Current liabilities	557,831.41	386,313.28
General Electric Company	2,922,675.57	560,024.15
Surplus previous year	749,791.10	536,931.95
Profits for year, less dividends	408,201.31	212,859.15
Totals	$11,088,499.39	$7,881,128.53

First Vice-President's Report.

From the report of the first vice-president, the late General Eugene Griffin, the following extracts are taken regarding sales:

During the past year turbo-generators of an aggregate capacity of more than 350,000 hp. have been sold. Thirty-seven Curtis turbines have been installed in Japan. We have also sold Curtis turbines for installation in England, Ireland, France, Germany, South Africa, Cuba, Mexico, Canada, Brazil, New Zealand, Siam, Peru, Algeria and Spain.

Sales of supplies and small apparatus, such as meters, transformers, direct and alternating motors, arc and incandescent lights, wiring devices, &c., increased 35 per cent. over the previous year. Of stationary motors, 40,365, aggregating 565,000 hp., were sold during the year. Sales of large apparatus have also increased, and show the same tendency as heretofore toward larger sized units. The maximum sizes in various lines are:

Units.	Nominal rating. Kilowatts.	Overload capacity. Kilowatts.
Turbo alternators	9,000	13,500
Water wheel generators	7,500	11,250
Direct current generators	2,700	4,000
Induction motors	6,000	9,000
Transformers	7,500	11,250

The business of the foreign department has shown a gratifying increase over the previous year. This business is well distributed throughout the world.

Third Vice-President's Report.

From the report of E. W. Rice, Jr., third vice-president, the following statements are taken regarding manufacturing operations:

The land area of all three plants is now about 445 acres. The following table shows approximately the floor space and the number of factory employees during the last five years:

	Floor space.	Employees.
1903	3,000,000	18,000
1904	3,700,000	17,000
1905	4,100,000	18,000
1906	4,350,000	22,500
1907	4,770,000	28,000

Schenectady Works.—A building of 237,000 sq. ft. of floor area, which will be used for the manufacture of large apparatus and will release space in other parts of the plant for switchboard and kindred work, is now nearing completion. There are also under construction a blacksmith and boiler shop aggregating 39,000 sq. ft. of floor space, an extension to the power house of 18,000 sq. ft., buildings for a wood working plant aggregating 80,000 sq. ft. and an addition of 26,000 sq. ft. for the manufacture of wire and cable. Additional important extensions aggregating 370,000 sq. ft. have been authorized.

Lynn Works.—The completion of buildings for the manufacture of railroad and stationary motors, &c., of 170,000 sq. ft. of floor area has been delayed by difficulties attending building operations, but these buildings will be finished and occupied at an early date. The extension to the turbine building of 45,000 sq. ft. has been completed. Buildings of 168,000 sq. ft. to provide increased facilities

for the production of meters, instruments and other work, will be erected this year.

Harrison Works.—A building of 60,000 sq. ft. has just been completed for the manufacture of high efficiency metal filament lamps.

A four-story building of 120,000 sq. ft., to be located on land recently purchased at Ft. Wayne, Ind., and to be devoted to the production of incandescent lamps, has just been started.

The plant of the Stanley-G. I. Elec. Mfg. Company at Pittsfield, Mass., has been used to a large extent for the manufacture of General Electric Company apparatus during the past year. It is now used wholly for this purpose, and will be operated hereafter as one of the General Electric Company's plants. The floor space at present available is 370,000 sq. ft., with about 1700 employees. There are now under construction extensions to this plant aggregating 178,000 sq. ft. which will be used for the manufacture of transformers, lightning arresters, switches and other apparatus.

An interesting and important application of electricity is found in the reduction of metals. During the present year we have sold to one customer, for use therein, 28 machines of a total capacity of 74,000 kw. These machines are the largest direct current generators in existence, were especially designed by us for the purpose, and those already completed have proved to be entirely successful.

Electric motors in industrial establishments continue to increase both in numbers and in variety of applications. An interesting case involving the use of very large motors of special design is that of driving rolling mills in the manufacture of steel. We have several contracts in which the motors for driving the mills average about 10,000 hp. capacity each.

OBITUARY.

COL. SAMUEL B. DICK, died at Meadville, Pa., May 10, from pneumonia, aged 71 years. He was interested in the Denver & Northwestern Railroad, half owner of the Phœnix Iron Works, Meadville; president of the Meadville Malleable Iron Company, and concerned in many other large enterprises, including the Crawford County Trust Company. He was captain of the first company organized in Crawford County for the Civil War. He was wounded at Dranesville, and commanded his regiment, the Ninth Pennsylvania Reserves, at South Mountain and Antietam.

W. W. GIBBS, vice-president and general manager of the new Shenandoah Steel Wire Company, Buffalo, N. Y., and vice-president and general manager of the Iroquois Machine Company, New York, died suddenly May 14 from heart disease in the office of the former company. He was a native of Virginia and was 54 years of age.

FRANK H. GOODYEAR, one of the founders of the Buffalo & Susquehanna Iron Company, died at Buffalo, N. Y., May 13, aged 58 years. He was born in Groton, N. Y.

Joseph E. Thropp's Saxton Furnace No. 2, at Saxton, Bedford County, Pa., was put in blast May 1, and will run on foundry iron. Since the purchase last fall of the properties of the Saxton Furnace Company, bankrupt, the new owner has made extensive improvements, not only to the blast furnace plant at Saxton, but also to the coal and coke properties and the iron ore mines in Huntingdon County, Pa. It is expected that the remodeled furnace will be able to average over 200 tons per day after additional boilers and blowing engines, which are now being erected, are put in service. The Earlston Furnace, at Earlston, Bedford County, Pa., under the same ownership and management, produced 6316 gross tons of pig iron during April, an average of over 210 tons per day, which is a new daily average for a month. The management of Mr. Thropp's various pig iron, coal, coke and iron ore properties is in the hands of Joseph E. Thropp, Jr., with Geo. W. Hughes, assistant manager. Headquarters are at Earlston, Pa. The product of the furnaces is sold by Pilling & Crane, Philadelphia, New York and Pittsburgh.

PERSONAL.

Evan F. Jones has been elected vice-president and general manager of the Southern Steel Company, with offices at Birmingham, Ala. Mr. Jones has been for some years manager of the purchasing department of the International Harvester Company at Chicago. He is succeeded in that position by H. B. Utley, heretofore superintendent of the Keystone Works of the International Harvester Company at Streator, Ill.

G. M. Black has resigned as superintendent of the Cleveland Furnace Company, Cleveland, Ohio. He is succeeded by G. W. English.

W. A. Sprague, manager of the woven wire department of the American Steel & Wire Company, Chicago, was injured in the wreck of a suburban passenger train, which occurred on May 9 in the outskirts of the city. Mr. Sprague's injuries, though painful, were not of a serious nature.

H. J. Steinbreder has been transferred from the Toledo plant of the Republic Iron & Steel Company and made superintendent of the Sylvan plant at Moline, Ill., succeeding J. J. Worker, resigned, who goes to the Calumet Steel Company, Chicago Heights, Ill., as mill manager.

Andrew Carnegie sailed for Europe May 8 on the Baltic.

G. P. Blackiston has resigned from the Crucible Steel Company of America, Pittsburgh, with which he had been connected for eight years as steel expert, to take a more active interest in the Pittsburgh Automatic Vise & Tool Company, Pittsburgh, of which he is president and general manager. The business of the latter has grown very largely, necessitating that Mr. Blackiston give it his entire time.

Frank E. Parks, formerly superintendent of the open hearth department of the Duquesne Steel Works of the Carnegie Steel Company, has resigned to accept a similar position with the Colorado Fuel & Iron Company, effective June 1.

G. W. Vreeland, formerly assistant superintendent of the Duquesne blast furnaces of the Carnegie Company at Duquesne, Pa., has been made general manager of the blast furnaces at Mingo Junction, Ohio. Harry McMasters Stewart has been promoted from general foreman to assistant superintendent of the Duquesne furnaces, succeeding Mr. Vreeland.

R. D. Campbell, secretary of the Allegheny Steel Company, Pittsburgh, has sailed for Europe.

Charles E. Pope, president of the Pope Tin Plate Company, Pittsburgh, will return this week from a trip to South Africa.

William T. Dunning, purchasing agent of the Chester Steel Casting Company, Chester, Pa., has been elected a director and secretary of that company, succeeding A. G. Lorenz, resigned.

At the stockholders' annual meeting of the General Electric Company, held at Schenectady, N. Y., May 14, Marsden J. Perry was elected to succeed the late Gen. Eugene Griffin as first vice-president. The election of directors resulted as follows: Gordon Abbott, Oliver Ames, T. Jefferson Coolidge, Jr., Frederick P. Fish, George L. Gardner, Henry L. Higginson, Robert Treat Paine 2d, of Boston; C. L. Coffin, J. Pierpont Morgan, S. L. Schoonmaker, Charles Steele, of New York; W. M. Crane, of Dalton, Mass.; Marsden J. Perry, of Providence, R. I.; J. P. Ord, of Albany, and E. W. Rice, Jr., of Schenectady.

H. E. Norbum, George S. Hoell, Wm. H. Taylor and Charles Wolf, who until recently were with the George V. Cresson Company, Philadelphia, Pa., have opened offices, as consulting and contracting engineers, in the Real Estate Trust Building, in that city, under the name of the Norbum Engineering Company.

Edward B. Moore, who has been assistant commissioner of patents for several years, has been appointed commissioner to succeed Frederick I. Allen, resigned.

The National Association of Stove Manufacturers.

The thirty-sixth annual convention of the National Association of Stove Manufacturers was held at the Hotel Astor, New York, May 8 and 9. The attendance was above the average and probably more interest than usual was taken in the proceedings and discussions, due to the fact that the stove business has for some years enjoyed increasing activity and manufacturers are anxious to do everything in their power to maintain satisfactory conditions. The retiring president, Walter P. Warren of the Fuller & Warren Company, Troy, N. Y., delivered an address at the opening session, of which the following is a part:

President Warren's Address.

Looking back upon the events of the past fiscal year, remarkable as they have been in material prosperity, we have reason to congratulate ourselves that we are not now suffering from reaction or perhaps extreme depression. It has been a year of unprecedented prosperity, of enormous production of gold, copper and iron, of fruitful crops, of increased wages, of universal employment of labor; mills and factories have been unable to supply the demands made upon them, and at the same time the financial resources of the country have been sorely taxed to provide means to exploit the extraordinary business developments.

We are now well advanced in the second quarter of the new year, and the outlook in some of its aspects is perplexing. Prosperity has been so universal and the tension upon the markets so intense, there is reason for apprehension that overprosperity has been carried to such an excess that reaction may be logically expected. Similar misgivings were freely expressed concerning the outlook at this period last year, and yet the country and its various enterprises went forward with a vigor and scope resulting in the most astonishing business climax that the world has ever witnessed.

LABOR.

The continued business activity of late years has had the legitimate effect of creating an enormous demand for labor, resulting in an exceedingly high level for wages; and it is to be feared that the increased prosperity has resulted in less efficiency. Organized labor may be used to the physical, mental and moral advancement of the workingman. It has accomplished some notable results in securing higher wages and shorter hours, but it must demonstrate its ability to stand prosperity; for labor may easily press its advantages too far, and its present prosperous conditions be transformed into disaster by want of wisdom and toleration.

Prices for almost all commodities continue to tend upward; the latest reports inform us that they have reached the highest point in 20 years. This upward tendency must eventually reveal some of the consequences of a continuous enhancement of values. Those industries which have been measurably profited by a rise in prices can afford to pay increased wages, because they have been enabled to make unusual profits. The stove manufacturer, as a class, finds feeble footing among those so favored, yet he will be forced by the same argument to advance wages and make similar concessions to his employees.

COSTS AND SELLING PRICES.

If my opinion were asked as to what was the most important subdivision of the stove manufacturer's avocation, my reply would most emphatically be: "A system for ascertaining the correct cost of manufacturing and selling his product." The art of accurately figuring costs is rather a late development in this country. The methods employed by our predecessors were coeval with an age of greater profit and less competition. Recent times, however, have developed an entire change in methods and practice, all agencies tending to produce more cheaply, in greater quantities and at a minimum of labor and expense.

The practice of making selling prices in accordance with the price asked for similar goods by a competitor is a fallacious method; and, while it may bring results for a time in increased volume, it must eventually end in disaster and most emphatically prove the value and importance of an accurate cost system. When actual cost is known, the price can be determined that should pay a profit. The stove manufacturer of the present day to be successful must practice strict economy, and to that end he must know his exact costs. A successful business cannot be maintained by accepting the artful plea of the purchaser that he can obtain wares of the same character at a less price. It must be evident that every prudent man should take this matter into his own hands, and with the aid of an intelligent cost computation make prices that will afford him a reasonable profit.

When considering this all important proposition of "costs," the question of the hour arises as to how much more will our production cost during the current year over the costs prevailing last year. Careful and conservative estimates have been made; and upon comparing the average cost of labor and material employed during the year 1906 with the prices prevailing for like factors for the first half of the present year, it has been computed that the increased cost will average $10 or more per net ton.

As an illustration, imagine a stove manufacturer melting 5000 tons of iron, and from its product doing a yearly business of, say, $550,000 and upward. On this basis of advance of $10 per ton, the production would cost $50,000 more than for the previous year; and, should manufacturing be charged with interest on invested capital of, say, $500,000, at the rate of 5 per cent. (for in the stove business the amount of capital is about equal to the business done), there would be an additional cost of $25,000, making an apparent increased cost for the present year of $75,000, provided interest on capital had not been considered the year previous. Now, then, if the product is sold at an advance of 5 per cent. over last year's figures, and that business was not particularly remunerative, it certainly cannot be a very difficult problem to predicate the profits for the present year, with the presumtion that no material changes will occur.

The year 1906 saw probably the largest output and greatest demand for cooking and heating apparatus that the trade has ever experienced. A slight advance was obtained in selling prices late in the season, but the amount was insufficient to cover the increased cost of labor and material which occurred during the year; consequently, the general average profits of the year 1906 were extremely disappointing. Manufacturing, as well as distributive, costs for the present year must necessarily be greater than those of 1906. Materials and labor are all on a higher plane than the average cost of similar commodities during the previous year, and the tendency to increase general expenses is not diminishing.

At the various business sessions papers were read, as follows: "The Relative Importance of Stove Manufacturing Details," by Abram C. Mott of the Abram Cox Stove Company, Philadelphia; "Costs," by L. B. Baker; "Up to Date Office Practice," by W. G. Henry of the Detroit Stove Works, Chicago; "The Profits of the Stove Business," by Edmond Raferty of Rathbone, Sard & Co., Aurora, Ill.; "Are the Most Profitable Results Obtained by the Manufacturer Who Specializes His Business or by One Who Adds to His Stoves and Ranges Such Goods as Furnaces, Hot Water and Steam Heating Apparatus, Gas and Gasoline Stoves?" by Lewis Moore of the Moore Brothers Company, Joliet, Ill.; "The Value of Advertising as Applied to the Stove Business," by Frederic W. Gardner of the Buck's Stove & Range Company, Chicago.

The paper by Mr. Mott attracted the most attention, and was most fruitful of immediate results. The author forcibly depicted the necessity of handling the sales department of a manufacturing establishment with a view to getting the best results from conducting the business, effectively showing how the most careful management in the manufacturing department was often nullified by weakness in the selling end of the business. At the conclusion of the discussion which followed the reading of his paper Mr. Mott was made chairman of a special committee appointed on Method to Unify the Stove Trade, with the view of making practical use of his criticisms and suggestions. Subsequently this committee made a report recommending the appointment of a national commissioner to act with the secretaries of the local associations to secure common practice in commercial methods.

Officers were elected for the ensuing year, as follows: President, W. G. Henry, Detroit Stove Works, Chicago; vice-presidents, Wm. J. Myers, Union Stove Works, New York, and Abram C. Mott, Abram Cox Stove Company, Philadelphia; general secretary, Thomas J. Hogan, Chicago; commissioner, Edward C. Hanrahan, Chicago; treasurer, J. Darl Buckwalter, Buckwalter Stove Company, Royersford, Pa.; Board of Managers, Ralph S. Buck, Bridge & Beach Mfg. Company, St. Louis, Mo.; E. W. Anthony, Smith & Anthony Company, Boston, Mass.; Charles A. Du Charme, Michigan Stove Company, Detroit, Mich.; Edward Bowditch, Rathbone, Sard & Co., Albany, N. Y., and N. H. Burt, Great Western Stove Company, Leavenworth, Kan.

The Jones & Laughlin Steel Company, Pittsburgh, is having plans drawn for an eight-story steel and brick office building, which will be erected at Third avenue and Ross street in that city. The building will be used entirely for the company's office purposes.

NEWS OF THE WORKS.

Iron and Steel.

The Superior Steel Company, Carnegie, Pa., manufacturer of cold rolled strip steel, has closed a deal with the H. L. Dixon Company for the purchase of its property at Carnegie, comprising 3 acres of ground, with buildings, but will not secure possession until November next. The ground will be utilized by the company for the building of four 50-ton open hearth furnaces and other extensions to its plant. In the meantime the H. L. Dixon Company, which makes a specialty of glass house construction, gas producer work, &c., will look for a site in the Pittsburgh District on which it will erect a new plant.

Arthur G. McKee, Cleveland, Ohio, has recently placed furnace distributers manufactured under his patents on Furnace No. 3 of the Lackawanna Steel Company and on Furnace A of the Union Furnace Company, Buffalo.

Furnace I of the Edgar Thomson plant of the Carnegie Steel Company at Bessemer resumed blast on May 8 after being idle for relining and repairs. Furnace C at this plant, which is now idle for relining and repairs, is expected to resume about June 20, while No. 3 Isabella stack, which is also idle for repairs, is expected to be ready for blast about June 1.

The Pioneer Steel Company, Rockford, Ill., maker of improved soft center carbonized steel, has recently reorganized, with a capital stock of $600,000. The company's product is designed as a substitute for rolled soft center steel plates used by implement makers. It is also said to be suitable for the making of dies and machine knives requiring high grades of tool steel; and it is claimed that it can be produced and sold at prices materially lower than ordinary crucible steels. It is the purpose of the reorganized company to largely increase its operations, and to that end plans have been made and work will soon be begun upon a new plant that will provide facilities for a largely increased output.

W. Z. Burton, representing the Fort Worth Iron & Steel Company, has been making investigations at Beaumont, Texas, with reference to locating a rolling mill at that place. The cheap fuel there is regarded as quite an item. Mr. Burton's plant uses a great deal of scrap iron.

The Harrisburg Pipe & Pipe Bending Company, operating a steel, pipe and rolling plant in Harrisburg, Pa., this week put into operation its pipe mill, which has been idle for about 18 months. The plant was started on single turn, and it is the intention to operate it regularly. The company is running its steel plant on full time, and has added another turn to its rolling mill.

The Cambria Steel Company is pushing work on its new Furnace No. 8, near Johnstown, Pa., and it is expected that it will be ready to start in August or September.

The American Electric Furnace Company, 45 Wall street, New York, has been incorporated for the purpose of exploiting the electric induction steel furnace under the Colby and Kjellin patents. J. Mitchell Clark is president; J. Armstrong Rawlings, vice-president, and Arthur Herring, secretary.

Full particulars may be had from H. Stuart Hotchkiss and Frederick Farnsworth, receivers, New Haven, Conn., concerning the sale of the National Wire Corporation, bids for which will be opened May 30. The property offered includes the entire plant, valued by appraisers appointed by the court at $1,166,999, which is offered subject to an outstanding issue of $470,000 6 per cent. first mortgage bonds.

S. V. Huber & Co., consulting engineers, Fulton Building, Pittsburgh, are completing the installation of two 15-ton Bessemer converters for the Dominion Iron & Steel Company, Sidney, Nova Scotia, and are also building one skelp mill and two pipe mills for the Düsseldorfer Rohren und Eisen Walzwerke, Düsseldorf, Germany.

Furnace F, the new stack of the Colorado Fuel & Iron Company, Pueblo, Colo., was blown in May 2. This furnace, the construction of which was started in 1902, is 85 x 20 ft. and has a capacity of about 350 tons a day.

The blast furnace of the Globe Iron Company, Jackson, Ohio, was blown in May 10 after relining.

The Hamilton Furnace of the Hanging Rock Iron Company, Hanging Rock, Ohio, was blown in this week after relining.

The Wellston Steel & Iron Company, Wellston, Ohio, expects to put its Milton Furnace in blast in the last week in May.

The Lake Superior Corporation has started up one of its new open hearth furnaces at Sault Ste. Marie, Ont. Open hearth rails as well as Bessemer rails will be rolled hereafter.

The furnace of the Penn Iron & Coke Company, Canal Dover, Ohio, went out of blast May 10 for relining. It is expected that it will be out of blast about 30 days.

General Machinery.

The Speer Improved Gas Machine Mfg. Company, El Paso, Texas, has been incorporated, with a capital stock of $50,000. It is the purpose to immediately erect a factory for the manufacture of the Speer automatic gas machine, which it expects to have in operation within the next 30 days.

The Reading Textile Machine Works, Wyomissing, a suburb of Reading, Pa., has let a contract for over $50,000 to George W. Beard & Co. of Reading, for an addition to its plant, 85 x 180 ft., five stories.

Improvements which will embrace the erection of an extensive machine shop by the Republic Iron & Steel Company at its Sylvan steel works at Moline, Ill., are now being planned in the offices of the company at Pittsburgh. The new machine shop, which will be finished during the present year, will, when completed, be equipped throughout with modern machinery.

The Detroit Steel Products Company, Detroit, Mich., has purchased a site on the Michigan Central Railroad Belt Line, at Chene street, where it plans to erect a new plant, the main building of which will be about 450 ft. long, with end wings of 100 ft. each. This move is prompted by an expansion of business that has outgrown present facilities. While arranging for a largely increased output of automobile and railroad car springs, the new plant will provide equipment for making a line of drop forgings.

The Wallace, Lindesmith Hoist Company, Fort Wayne, Ind., has purchased and is refitting a factory for the manufacture of steam, electric and gasoline hoisting engines, also concrete mixer conveyors. A portion of the machinery is already installed and the plant will be in operation within 10 days.

Orders recently received by the Thomas Carlin's Sons Company, Allegheny, Pa., manufacturer of rolling mill machinery, hoisting engines, grinding pans and shears, include six No. 18 shears, three of which have been shipped and the other three will go forward in about a week; one No. 1 shear, for Canada; one No. 3, for Philadelphia; one No. 44 shear, for Bethlehem Steel Company, South Bethlehem, Pa.; one No. 8 shear, for Reading, Pa.; one No. 28, for Pittsburgh, and one No. 40 shear, for Massachusetts; a 9-ft. grinding pan for Chicago and another for Columbus; two 6-ft. pans, for Milwaukee; one 6-ft. pan, for New York; one 6-ft. pan, for San Francisco; one 8-ft. double and one 9-ft. single, for Pittsburgh; one 14 x 14 in. x 70 ft. derrick and five drum hoisting engines, for Beaver, Pa.; two 10 x 10 in. double cylinder, double drum hoisting engines for Southern points, and four hoisting outfits for Pittsburgh.

The National Radiator Company, Johnstown, Pa., has decided to enlarge its plant very materially, and considerable new equipment will be required.

The Harrold Foundry & Machine Company, recently incorporated, has bought the entire punch and shear business formerly owned by the Mahoning Foundry & Machine Company at Youngstown, Ohio, and is now designing improvements and will place on the market both single and double punching and shearing machinery. The punching machines will run from small sizes up to machines capable of punching 4-in. holes in ⅝-in. stock, and 1⅜-in. holes in 1-in. stock, while the shears will cut 1 x 8 in. material. This line of machinery will be manufactured in the plant formerly operated by the Glen Driller Company at New Kensington, Pa., equipment consisting of planers, grinding machinery, &c., having been installed. The cupola has been increased for a larger output, it being the intention of the company to manufacture a line of high grade gray iron castings up to 7 tons in weight. A department devoted to the manufacture of brass castings will also be added.

The Conally-McIlheran Electrical Engineering Company, Chattanooga, Tenn., has received an order for a 170-kw. alternator, with 18-kw. exciter, for the plant of the Southern Skein & Foundry Company, East Lake, Tenn., which is a branch of the Illinois Bolt Company, Carpentersville, Ill.

The New Holland Machine Company, New Holland, Pa., is building a new foundry, 85 x 100 ft., which will be equipped with one 2½-ton and one 6-ton cupola and other modern appliances. The company's business has almost doubled during the last year and the prospects for the future are very bright. It is the intention to increase its output from 60 to 75 per cent. The company has just paid an annual dividend of 6 per cent.

In order to handle its greatly increased business the Tennessee Coal, Iron & Railroad Company, Birmingham, Ala., has placed an order with the Crocker-Wheeler Company, Ampere, N. J., for the complete electric motor equipment of its new steel rail mill. The latter company has recently been obliged to open an office in Birmingham to handle the rapidly increasing business in that section. The order includes 15 Crocker-Wheeler form W rolling mill motors, designed for the arduous service of rolling mills and which have attracted very favorable attention in the steel world for ruggedness and simplicity of design. The order aggregates about 575 hp. Among other purchasers and users of the form W rolling mill motor are the following: Alliance Machine Company, Bethlehem Steel Company, Carnegie Steel Company, Illinois Steel Company, Lorain Steel Company, Mineral Point Zinc Company, Morgan Engineering Company, National Tube Company, Pennsylvania Steel Company, Shelby Steel Tube Company, United Engineering & Foundry Company and Youngstown Sheet & Tube Company. The Crocker-Wheeler Company is building an extensive addition to the plant.

The Hoffman-Marquardt Iron & Machine Company, 1523 North Broadway, St. Louis, Mo., recently organized, has equipped a machine shop for general repair work. Melvin Hoffman is president; G. H. Marquardt, Jr., secretary and treasurer.

These officers, with H. J. Marquardt and P. Pollock, constitute the Board of Directors.

The Great Northern Railroad is extending its shops at Superior, Wis.

Power Plant Equipment.

The Cleveland, Ashland & Mansfield Traction Company has decided to build a large power house in Ashland, Ohio, to cost about $250,000. A site has been secured.

The directors of the Columbus Public Service Company, Columbus, Ohio, have under consideration the enlarging of their plant for furnishing light and heat, and will probably purchase some additional equipment.

Bonds for $28,000 have been authorized by the City Council of Dawson, Minn., part of which will be applied to the installation of an electric light plant, for which $12,000 will be expended. About $16,000 will be applied to the water works system.

Plans and specifications are being prepared by the City of Superior, Wis., for a municipal electric light and power plant of about 1000-hp. capacity. The plans, it is expected, will be completed about May 20, and submitted to the City Council. The ultimate prosecution of the work involved will depend upon the estimated cost of installation, and nothing definite will be known regarding it until the plans and report are submitted. Owen Ford, Security Building, St. Louis, Mo., is consulting and supervising engineer for the work.

The Darby Boiler Works, Kansas City, Mo., is erecting a $50,000 plant on West Fifth street, which it will occupy as soon as completed. The new quarters will give considerably more capacity than that of the present plant.

Scranton, Pa., which recently sold an issue of $200,000 bonds to a Cleveland firm, will shortly ask bids for the construction of five steel bridges.

The Jacobson Engine Mfg. Company, formed to manufacture high power gasoline engines, has purchased what is known as the Roberts mill property in Chester, Pa., and will remodel and improve it. Charles Jacobson of New York; J. C. Taylor, Chester, and Robert E. Ross, Philadelphia, are interested in the new enterprise. The installation of machinery will be started at once.

Last week we noted the purchase of the Ball Engine Works by the Stearns Company, Erie, Pa. The plant which the Stearns Company purchased was the old works of the Ball Engine Company, the latter having within the past two or three years built entire new works, including machine shops and foundry, which are complete in every detail.

The Electric Light Committee of Dora, Ala., will receive bids until June 6 for the installation of a municipal electric lighting plant.

The Board of Water Commissioners of Atlantic City, N. J., will receive bids until June 4 for a 12,000,000-gal. pumping engine for the Absecon pumping station.

Foundries.

The Decatur Foundry Company, Decatur, Ind., recently incorporated with a capital of $30,000, will begin the construction of four new buildings within the next few weeks. Contracts for the steel structural work have been let to the Indiana Bridge Company. The main foundry building will be 60 x 220 ft., and the building for core, pattern and finishing room will be 36 x 140 ft. The product of the plant will be gray iron castings of light and middle weight, and also castings of brass and aluminum.

The W. J. Oliver Mfg. Company, Knoxville, Tenn., will erect a $100,000 building, 80 x 400 ft., of steel construction, at its foundry plant. The capital stock of the company was recently increased to $1,000,000. New car shops and a power plant will be added.

The Lonsdale Foundry Company, Lonsdale, Tenn., organized some six months ago by John T. Ammons, Arthur Richards and others, will erect a two-story addition, 30 x 136 ft.

The firm of Mayer Brothers, founders and machinists, Mankato, Minn., has been succeeded by the Mayer-Hacker Mfg. Company, which was recently reorganized, with a capital stock of $200,000. Carl F. Hacker is president; Louis Mayer, vice-president; Lorenz I. Mayer, secretary and treasurer.

The Amsler Engineering Company, engineer and contractor, Pittsburgh, has received a contract from the Shull Steel Casting & Mfg. Company, Canton, Ohio, for the building of a 10-ton open hearth furnace, annealing furnace and core ovens. The company has received an order from the Bellaire Bottle Company, Bellaire, Ohio, for a back port tank and flue work.

The Oklahoma Malleable Iron Works, Shawnee, Okla., has been incorporated with $200,000 capital stock by J. E. McKee, J. R Pring, Chas. McCormick and H. D. McKee, all of Shawnee.

The Pittsburgh Valve & Fittings Company, Barberton, Ohio, is building an addition to its foundry, 64 x 160 ft., which will be equipped with two large air furnaces, the melting capacity of each being 35 tons of malleable iron. The company expects to have the building completed and the furnaces installed and in operation about June 1.

The Manufacturers' Foundry Company, Milwaukee, Wis., recently organized by Eastern capitalists and several Milwaukee business men to engage in the general foundry business, will erect a new foundry plant on a tract of 20 acres near the southern limits of the city. Detailed plans are being prepared by architects and building operations have already been commenced, with the expectation that the plant will be ready for business by early fall. The buildings to be erected will cost $250,000, and a force of 200 experienced workmen will be employed. Fred Devere, formerly of the Devere & Schloegel Lumber Company, is president and will give the work of building and managing the foundry his personal attention.

The Ravenna Furnace & Heating Company, Ravenna, Ohio, which was recently organized, has secured a site and will shortly begin the erection of a foundry, 80 x 100 ft. Part of the equipment for the new plant has already been provided, but some additional machinery will be purchased. The company manufactures the Ravenna cast iron hot air furnace.

The Vincennes Pipe & Casting Company, Vincennes, Ind., which has incorporated with a capital of $50,000, has begun the building of a new plant at South Vincennes. Machinery and equipment for the plant have been purchased, a part of which is already on the ground. The product of the company will be soil pipe and fittings, Murphy boilers and general castings. Charles L. Rundle is president and general manager; John D. Lacroix, vice-president; Cornelius F. Posson, secretary and treasurer; Gustave Schiffko, superintendent.

The Vulcan Foundry & Machine Company, New Castle, Pa., has been adjudged bankrupt. The plant of this company has been idle for a long time.

The plant of the Gadsden Pipe & Foundry Company, Gadsden, Ala., has been sold to H. Hammond and associates, who have organized the Gadsden Pipe & Fittings Company to operate the plant. The new company's offices are in the Brown-Marx Building, Birmingham, Ala.

The Brockville Malleable Iron Company, Limited, Brockville, Ont., has incorporated, with a capital stock of $60,000, and will erect a plant with a daily capacity of 10 tons of malleable iron castings. John A. MacKenzie is president, and John Connolly, secretary and treasurer.

Contracts have been awarded by the Navy Department to the Wm. Cramp & Sons Ship & Engine Building Company and Paul S. Reeves & Sons, both of Philadelphia, for castings in connection with submerged torpedo tubes. The former company will furnish bronze and steel castings, while those furnished by the latter will be of manganese bronze.

The foundry of the Sterrit-Thomas Foundry Company at Thirty-second and Smallman streets, Pittsburgh, was completely destroyed by fire May 13. The loss is given as $45,000, on which there was insurance of $32,000. D. P. Thomas, president of the company, states that the foundry will be rebuilt at once and considerable new equipment will be needed.

Bridges and Buildings.

The contract for the erection of the Majestic Theater and office building in Milwaukee, Wis., has been awarded to John Griffith & Son, Chicago, at a price approximating $1,500,000. The building will be 14 stories high and of steel construction.

The Southwestern Bridge Company, Joplin, Mo., has recently received the following orders: The Mercantile Metal Milling Company, Webb City, a 250-ton mill, including steel tank and tower, which is the first mill constructed entirely of steel in the lead and zinc district of Missouri; Kaw Gas Company, Independence, nine steel mill buildings and two steel tanks and towers; Lanyon-Starr Smelting Company, Bartlesville, I. T., steel tank and tower.

Fires.

The foundry of the Prime Steel Company, Milwaukee, Wis., was destroyed by fire May 7. The company was only recently organized and employed about 50 men. The loss is estimated at $20,000. O. L. Prime, president, states that the plant will be rebuilt as soon as possible.

The plant of the New York Sanitary Utilization Company, Barren Island, was damaged $50,000 by fire May 12.

The Penn-Wyoming Copper Company's smelter, converter and crusher at Grand Encampment, Wyo., were burned May 10, the loss being about $100,000.

The plant of the Novelty Iron Works, Sterling, Ill., was damaged $10,000 by fire May 8.

The power plant of the Ashland Light, Mill & Power Company, Ashland, Neb., was burned May 8, the loss being about $6000.

The Union Abbatoir Company's plant at Montreal, Canada, was burned May 11, the loss being about $50,000.

The foundry of the Kingsland-Kay-Cook Mfg. Company, St. Louis, Mo., was partially destroyed by fire last week. The loss is estimated at about $50,000.

The carriage and machine shop of the Yancey Company, Culpeper, Va., was burned May 8, with an estimated loss of $10,000.

The warehouse of the Etna-Standard plant of the American Sheet & Tin Plate Company, at Martins Ferry, Ohio, was destroyed by fire May 13. The loss is given as $25,000, and a new warehouse will be built at once.

Hardware.

The Superior Spring Hinge Company, Chicago, has moved its plant from 15 South Canal street to 123 South Clinton street. The new quarters will afford facilities for a largely increased output of the Superior spring hinges and door checks manufactured by the company.

The Lebanon Valley Chain Company, which will shortly be incorporated to manufacture chains at Lebanon, Pa., has let the contract for its first buildings to A. H. Whitmer of Lebanon. The buildings are to be completed by July 1. They will be 40 x 75 and 20 x 120 ft. It is planned to begin operations as soon as the structures are finished.

The Pana Metal Bed & Mfg. Company, Pana, Ill., has bought the extensive plant, consisting of several large buildings, originally erected for use as machine shops by the Baltimore & Ohio Railroad at Pana at a cost of $100,000. Ample space will be afforded in this plant for the accommodation of the company's growing business.

The Columbus Chain Company, Columbus, Ohio, is contemplating the erection of an addition to its present plant.

An application for a Pennsylvania charter has been made at Harrisburg, Pa., by Emil B. De Sauze, B. W. Ficker and Albert Lee Magilton of Philadelphia, for a company to be known as the Phillips Pressed Steel Pulley Works. In addition to pulleys the company expects to manufacture wire nails and rivets.

The Improved Scale & Foundry Company, Harrisonville, Mo., is preparing to erect a new plant. The company is the successor to the Allen Scale Company. J. W. Colburn, Jr., is president and F. H. Howard secretary.

The Parry Mfg. Company, Indianapolis, Ind., is erecting an addition to its extensive buggy manufacturing plant, which will be 96 x 260 ft., two stories. The architectural style will correspond with the other buildings. The construction will be of concrete, brick and steel. The building will be used to increase the capacity of the blacksmithing and wheel-tiring departments.

The Curtis Screw Company, Buffalo, N. Y., has purchased the Graphic Arts factory building, located on the east side of Gull street, between the New York Central Belt Line tracks and Niagara street, one block east of Ferry street. The building contains 10,000 sq. ft. of manufacturing space. The company is at present operating at 1904 Niagara street and will move to the new plant as soon as convenient.

The Norfolk Wire Cloth & Wire Fence Mfg. Company, Norfolk, Va., has been organized with a capital of $300,000. The company will erect a plant estimated to cost $125,000 for the production of wire fence and wire cloth. The officers are: Paul R. Howard, president, and J. P. Andre Mottu, secretary and treasurer.

The Diamond Chain Mfg. Company, Indianapolis, Ind., has secured a building permit for the erection of a new factory building, to be located at Senate avenue and Georgia street, representing an outlay of $30,000. The building will be of brick, four stories in hight.

Miscellaneous.

The Reinforced Concrete Pipe Company, Cleveland, Ohio, has increased its capital stock from $100,000 to $500,000.

John Byrider and other Akron, Ohio, men have incorporated the Byrider Electric Auto Company, with a capital of $60,000. The company has secured the plant of the Williams Electric Vehicle Company, Cleveland, and will manufacture electric automobiles.

The Buckeye Motor Car Company has been incorporated in Columbus, Ohio, with a capital stock of $25,000, to make and repair automobiles and to do general machine shop work.

The International Mfg. Company, Buffalo, N. Y., has purchased 10 acres of land on the New York Central Railroad, near Pullman Station, two miles north of Buffalo, and will build a plant for the manufacture of building material by a patented process, a substitute for brick. The main building, which is to contain special machinery, will be 200 x 300 ft.

The G. H. Williams Company, Cleveland, Ohio, reports a good demand for its new clamshell buckets, having sold 29 of the buckets since the first of the year. It has sold one bucket in Havana, Cuba, and several in Canada. The company is now building three revolving derricks, having orders for them from the Rogers Sand Company, Pittsburgh, Pa.; McCready Bros. Company, Braddock, Pa., and the C. H. Little Company, Detroit, Mich.

The Vollkommer-Reich Company, Empire Building, Pittsburgh, has received an order from John R. Keim Mills, Incorporated, Buffalo, N. Y., for an oxy-acetylene welding plant to be used in connection with stamping work. Work has been completed on a welding plant installed by this company in the plant of the A. O. Smith Company, Milwaukee, Wis., and the company has commenced work on the installation of a welding outfit for the Enterprise Enameling Company, Bellaire, Ohio.

The Youngstown Car & Mfg. Company, Youngstown, Ohio, builder of standard wooden freight cars and wooden or steel industrial cars, has placed a contract with the McClintic-Marshall Construction Company for the erection of a steel building, 55 x 260 ft., to be used as an erecting shop. No new equipment will be required. The company has large orders on its books, and this addition to its capacity is made necessary by the heavy increase in its business.

The Crown Electrical Mfg. Company, St. Charles, Ill., manufacturer of gas, electrical and combination chandeliers, is planning the erection of a new plant, the cost of which is estimated at $25,000.

The Atlanta Blow Pipe & Mfg. Company, Atlanta, Ga., has been organized by H. J. Hinchey, Geo. L. Bell and others, with a capital stock of $10,000, to manufacture fans and dust collectors for cotton mills.

The National Stove Company, Lorain, Ohio, whose plant was recently burned, with the exception of the press, foundry and plating room, has made arrangements to continue operations and will resume the manufacture of steel and gas ranges within the next two weeks.

Two hundred new coke ovens of the modified Belgian type will be erected at the Herbert Works, New Salem, Pa., of the Connellsville-Central Coke Company, the output of which is controlled by J. H. Hillman & Son, Pittsburgh. The work has been commenced and a contract for 1,600,000 brick has been closed with the Harbison-Walker Refractories Company. The ovens will be 35 ft. long and 5 ft. wide, which is larger than the experimental ovens erected last fall at the Mount Braddock plant of the Rainey Coke Company.

The Newell Engineering Company, 905-906 Empire Building, Pittsburgh, has arranged to represent the Industrial Gas Company, New York, for the installation of the Herrick gas producer in the Pittsburgh District.

The Beaumont Iron Works, Beaumont, Texas, has commenced the construction of a large logging car plant which it intends ultimately to develop into a general car manufacturing plant. The plant is being erected on a site adjacent to the present works, and later on a car wheel foundry will be erected.

The Petroleum Iron Company, Washington, Pa., expects to place its new plant in Petroleum, Ohio, near Sharon, Pa., in operation about July 1.

The Ralston Steel Car Company, Columbus, Ohio, is completing an order for 1500 underframes for the Pullman Company for application to the box car equipment now being built for the Hocking Valley, Toledo & Ohio Central and Kanahwa & Michigan railroads. Orders for underframes, both for new cars and for repair purposes, sufficient to take the output of the plant for the greater part of the year are now in hand in the underframe department of the company.

The Manufacturers' Brass Company, Plainfield, N. J., has incorporated, with a capital stock of $50,000, to manufacture bronze and brass castings, bearings of all kinds, &c. The company is erecting a new building, 40 x 80 ft., and has purchased most of the equipment. G. W. V. Moy is president; A. L. C. Marsh, vice-president; H. W. Marshall, treasurer, and F. S. Schuster, general manager.

The Duff Patents Company, Frick Building, Pittsburgh, has been awarded a contract for four water sealed gas producers for the National department of the National Tube Company, at McKeesport, Pa.

The Pittsburgh Pole & Forgings Company has decided to enlarge its plant at Verona, Pa., by building an addition 100 x 100 ft., and providing room for new equipment recently ordered and now being installed. When this addition is completed it will double the capacity for making steel poles and forgings.

The Standard Galvanizing Company, West Pittsburgh, Pa., has been incorporated with a capital stock of $50,000. The incorporators are R. W. Atwood of Bellview, W. R. Bruce of Allegheny and J. W. Clark of Beaver, Pa. A large plant will be erected, it is stated.

The Duff Construction Company, Allegheny, Pa., has received orders for steel tanks for water storage purposes as follows: The Pittsburgh & Lake Erie Railroad, one tank 22 ft. in diameter by 52 ft. high, at Youngstown, Ohio; one tank 40 ft. in diameter by 40 ft. high, for Dickerson Run, Pa., and one of the same size for Williamsburg, Pa. Baltimore & Ohio Railroad, two tanks 24 ft. in diameter by 50 ft. high, for delivery at Washington, D. C.

Some splendid records for output were made in April at the Riverside Department of the National Tube Company, Benwood, W. Va., with the result that the high records in this plant in October last year were considerably exceeded. The records of the different departments are as follows: Converting mill—monthly record, April, 1907, 19,193 gross tons; previous record, October, 1906, 18,521 tons; increase, 672 tons. Blooming mill—monthly record, April, 1907, 17,507 tons; previous record, October, 1906, 16,808 tons; increase, 699 tons. Rolling mills—monthly record, April, 1907, 15,503 tons; previous record, October, 1906, 14,905 tons; increase, 598 tons.

The Iron and Metal Trades.

A very large tonnage of Rails has been arranged for delivery in 1908, with additional negotiations pending. The Tennessee Company has booked 55,000 tons for the Southern Pacific, a like amount for the Union Pacific, and 40,000 tons for the Illinois Central, making with the usual allowance of 5 per cent. for seconds, a total of 157,500 tons. Deliveries are to begin in March, 1908, and are to continue in equal quantities monthly during the balance of the year. The company now has booked for rolling 260,000 tons for next year, and carrying over two months' rolling has enough business under negotiation to take up the estimated capacity for 1908, of 360,000 tons.

The Illinois Steel Company has closed contracts for 1908 delivery for 75,000 tons for the St. Paul, 45,000 tons for the Burlington, 25,000 tons for the Rock Island, 5000 tons for the Nickel Plate and 5000 tons for the Chicago & Eastern Illinois. At the present time 100,000 tons additional are under negotiation.

The Pennsylvania Railroad has alloted to the mills on its lines a total of 142,600 tons for 1908 delivery. The specifications are very rigid, calling for the extraordinary discard of 25 per cent. from the top of the ingot, with special requirements as to straightening and as to ratio between section of bloom and of rail.

The total tonnage booked for 1908, therefore, foots up to about 500,000 tons, with important transactions still in abeyance.

Eastern Steel makers have been heavy buyers of Basic Pig Iron during the past two weeks, the sales during the movement thus far aggregating close to 100,000 tons, which includes purchases of 40,000 tons by one interest, 20,000 by another and a number of 10,000-ton transactions by other works. The market has hardened, and some of the sales were made on the basis of $23 at furnace, the delivered price being above $24 in some instances. We cannot learn that these purchases were dictated by the necessity of covering sales of semi-Finished and Finished Material already made, but have been forced by the fear that the supply of Basic Pig Iron during the second half would not be adequate.

There has been some lively buying in the Eastern territory of Foundry Iron, mostly in fair sized lots, which has strengthened the market and has checked the downward tendency, which was somewhat pronounced in April, when lower figures were made than was generally admitted at the time.

Additional purchases of Scotch and Middlesbrough Iron have been made for shipment to this country, and the foreign Iron is selling more freely, in spite of the advance abroad and the correspondingly higher prices here.

An important event in the Northern Charcoal Iron industry has been the merger of a number of Charcoal blast furnaces under the title of the Lake Superior Iron & Chemical Company. The furnaces thus coming together are the Newberry, Marquette, Manistique, Gladstone, Elk Rapids, Boyne City, Antrim and Hinkle.

The National Tube Company has issued a new list of discounts on Merchant Pipe, which is equivalent to an advance of $4 per ton on all sizes except 7 to 12 in. New prices have also been made on Boiler Tubes. Some important contracts have been placed, among them 120 miles of 18 in. and 10 miles of 14 in. Pipe for a natural gas line to Cincinnati, and one line of 150 miles of 6 in. and 8 in. Pipe.

A number of Riveted Pipe contracts have been closed, and others of considerable magnitude are coming up, which promise to give a good deal of work to the Plate mills.

Among the largest structural jobs closed during the week is that of the approach to the Blackwell's Island Bridge, calling for 6000 tons. In Chicago, work which will call for an aggregate of 20,000 tons is now being figured on.

A Comparison of Prices.

Advances Over the Previous Month in Heavy Type, Declines in Italics.

At date, one week, one month and one year previous.

	May15, 1907.	May8, 1907.	Apr.17, 1907.	May16, 1906.
PIG IRON, Per Gross ton:				
Foundry No. 2, Standard, Philadelphia	**$25.50**	$25.50	$24.50	$18.50
Foundry No. 2, Southern, Cincinnati	*24.25*	24.25	24.75	16.75
Foundry No. 2, Local, Chicago	**26.50**	26.50	26.00	18.50
Bessemer, Pittsburgh	**23.85**	23.85	23.35	18.10
Gray Forge, Pittsburgh	**22.85**	22.35	21.85	16.50
Lake Superior Charcoal, Chicago	**27.50**	27.50	26.50	19.00
BILLETS, &c., Per Gross Ton:				
Bessemer Billets, Pittsburgh	**30.50**	30.50	30.00	26.00
Open Hearth Billets, Phila	**32.50**	32.50	31.50	29.00
Wire Rods, Pittsburg	37.00	37.00	37.00	34.50
Steel Rails, Heavy, Eastern Mill	28.00	28.00	28.00	28.00
OLD MATERIAL, Per Gross ton:				
Steel Rails, Melting, Chicago	**18.50**	18.50	18.00	14.00
Steel Rails, Melting, Phila	**19.50**	19.50	19.00	16.50
Iron Rails, Chicago	*24.50*	24.50	25.00	21.25
Iron Rails, Philadelphia	**27.50**	27.25	27.00	21.00
Car Wheels, Chicago	25.00	25.00	25.00	19.00
Car Wheels, Philadelphia	24.00	24.00	24.00	16.75
Heavy Steel Scrap, Pittsburgh	18.00	18.00	18.00	15.00
Heavy Steel Scrap, Chicago	15.50	15.50	15.50	13.50
Heavy Steel Scrap, Philadelphia	*19.00*	19.00	19.50	16.25
FINISHED IRON AND STEEL, Per Pound:	Cents.	Cents.	Cents.	Cents.
Refined Iron Bars, Philadelphia	*1.85½*	1.83½	1.93½	1.63½
Common Iron Bars, Chicago	*1.76½*	1.76½	1.81½	1.66½
Common Iron Bars, Pittsburgh	*1.75*	1.80	1.80	1.50
Steel Bars, Tidewater, New York	**1.84½**	1.84½	1.74½	1.64½
Steel Bars, Pittsburgh	1.60	1.60	1.60	1.50
Tank Plates, Tidewater, New York	1.84½	1.84½	1.84½	1.74½
Tank Plates, Pittsburgh	1.70	1.70	1.70	1.60
Beams, Tidewater, New York	1.84½	1.84½	1.84½	1.84½
Beams, Pittsburgh	1.70	1.70	1.70	1.70
Angles, Tidewater, New York	1.84½	1.84½	1.84½	1.84½
Angles, Pittsburgh	1.70	1.70	1.70	1.70
Skelp, Grooved Steel, Pittsburgh	1.85	1.85	1.85	1.57½
Skelp, Sheared Steel, Pittsburgh	1.90	1.90	1.90	1.60
SHEETS, NAILS AND WIRE, Per Pound:	Cents.	Cents.	Cents.	Cents.
Sheets, No. 27, Pittsburgh	2.50	2.50	2.50	2.25
Wire Nails, Pittsburgh	2.00	2.00	2.00	1.85
Cut Nails, Pittsburgh	2.05	2.05	2.05	1.80
Barb Wire, Galv., Pittsburgh	2.45	2.45	2.45	2.30
METALS, Per Pound:	Cents.	Cents.	Cents.	Cents.
Lake Copper, New York	**24.75**	24.87½	24.50	18.75
Spelter, New York	*6.50*	6.55	6.80	5.90
Spelter, St. Louis	*6.37½*	6.40	6.65	5.85
Lead, New York	*6.00*	6.00	6.12½	6.00
Lead, St. Louis	*5.92½*	5.92½	5.95	5.87½
Tin, New York	**43.50**	42.25	40.50	49.00
Antimony, Hallett, New York	*20.00*	20.50	22.00	26.50
Nickel, New York	45.00	45.00	45.00	40.00
Tin Plate, 100 lb., New York	$4.09	$4.09	$4.09	$3.79

Chicago.

FISHER BUILDING, May 15, 1907.—(*By Telegraph.*)

The interest manifested by the railroads in forward Rail requirements, though by no means lively as compared with the buying of previous years, is nevertheless evidenced by the placing of a considerable tonnage within the week. Inquiries in this market developed into orders for 115,000 tons, which were placed by the Chicago, Milwaukee & St. Paul and Chicago, Burlington & Quincy for 1908 delivery. Building enterprises of one kind or another are calling for a large amount of Structural Material. Work now up for figures, and near the closing stage, is reported, which involves more than 20,000 tons. More than half of this tonnage is designed for use in bridges by Western roads. The situation as to mill deliveries of Plates, Sheets and Pipe is not improved. Though the demand for Pig Iron is light, and the tonnage moving for either nearby or forward delivery is unimportant, prices have again been advanced, and the principal Southern furnace interests have withdrawn all bookings against last half schedules. An important deal among the Northern Charcoal Iron furnace has been completed under which the Lake Superior Iron & Chemical Company takes over eight of the principal furnaces of that group.

Pig Iron.—Despite the fact that but little Iron is moving, prices are not only held with extreme firmness but show an advance that on the average amounts to about 50 cents a ton over last week's quotations. As against $19.50, which was the lowest price then named for No. 2 Foundry, Birmingham, nothing better than $20 is now quoted for fourth quarter, while from $21 to $21.50 is asked for third quarter delivery. Sales of spot Iron are few and are confined mainly

to carload lots for emergency requirements. Some variation in prices of spot Iron is noticed, the range being from $22.50 to $23.50, Birmingham, for No. 2 Foundry, though but one interest is quoting below $23. Among the orders closed last week were a few lots of Malleable Bessemer, one of which amounted to about 3000 tons. Northern Irons are unchanged as to price, being quoted at $24.50 to $25, Chicago, for last half delivery. The Sloss-Sheffield Company, which last week was reported to be out of the market for all save last quarter tonnage, has now withdrawn all bookings of forward deliveries for the rest of the year. The spread between nearby and forward deliveries of Lake Superior Charcoal Iron has closed up until practically the same price is asked for both, the price now quoted being $27.50. One Northern Charcoal furnace has withdrawn for all deliveries this side of November and December. A consolidation has been effected whereby the Northern Charcoal Iron furnaces, with two exceptions, have been merged into and taken over by the newly incorporated Lake Superior Iron & Chemical Company. The furnaces included in this merger are the Newberry, Marquette, Manistique, Gladstone, Elk Rapids, Boyne City and Antrim, all in Michigan, and the Hinkle at Ashland, Wis. The Superior Charcoal Iron Company will act as selling agent for all the above grouped furnaces except the Hinkle, which is represented by Rogers, Brown & Co. The Cadillac and Spring Lake furnaces, not included in the above group, are represented by Pickands, Brown & Co. The following prices are for May and June delivery, f.o.b. Chicago:

Lake Superior Charcoal	$27.50 to $28.00
Northern Coke Foundry, No. 1	27.00 to 27.50
Northern Coke Foundry, No. 2	26.50 to 27.00
Northern Coke Foundry, No. 3	26.00 to 26.50
Northern Scotch, No. 1	27.00 to 27.50
Ohio Strong Softeners, No. 1	26.50 to 27.00
Ohio Strong Softeners, No. 2	26.00 to 26.50
Southern Coke, No. 1	27.35 to 27.85
Southern Coke, No. 2	26.85 to 27.35
Southern Coke, No. 3	26.35 to 26.85
Southern Coke, No. 4	25.85 to 26.35
Southern Coke, No. 1 Soft	27.35 to 27.85
Southern Coke, No. 2 Soft	26.85 to 27.35
Southern Gray Forge	25.35 to 25.85
Southern Mottled	25.35 to 25.85
Malleable Bessemer	26.50 to 27.00
Standard Bessemer	25.30 to 25.80
Jackson Co. and Kentucky Silvery, 6 %	31.30 to 31.80
Jackson Co. and Kentucky Silvery, 8 %	32.30 to 32.80
Jackson Co. and Kentucky Silvery, 10 %	33.30 to 33.80

(*By Mail.*)

Billets and Rods.—Very few Rods are offered from any source. On the small lots moving here and there $37 to $38, Pittsburgh, is about the price asked for prompt delivery. There is an occasional inquiry for considerable lots of Forging Billets in the market, but few sales of moment are reported. The price of $38 and upward, according to size, Chicago, is firmly held on current orders.

Rails and Track Supplies.—Of the large Rail tonnage reported to have been placed last week for 1908 delivery, the purchases of Western roads represented 115,000 tons; 45,000 tons by the Chicago, Burlington & Quincy, and 75,000 tons by the Chicago, Milwaukee & St. Paul, both orders going to the Illinois Steel Company. While there is a good deal of inquiry for Light Rails, the number of orders being booked is comparatively small. We quote as follows: Angle Bars, accompanying Rail orders, 1907 delivery, 1.65c.; car lots, 1.90c. to 1.95c.; Spikes, 2.35c. to 2.45c., according to delivery; Track Bolts, 2.65c. to 2.75c., base, Square Nuts, and 2.80c. to 2.90c., base, Hexagon Nuts. The store prices on Track Supplies range from 0.15c. to 0.20c. above mill prices. Light Rails, 30 to 45 lb. sections, $35; 25-lb., $36; 20-lb., $37; 16-lb., $38; 12-lb., $39, f.o.b. mill. Standard Sections $28, f.o.b. mill, full freight to destination.

Structural Material.—Orders are coming forward in volume sufficient to keep rolling schedules 30 days and more ahead. Among the contracts pending which will be let within a few days are a theater and office building, Omaha, 2319 tons; the La Salle Building, St. Louis, 1200 tons, and 900 tons of material for repair of the Eighteenth street bridge, St. Louis. Other contracts being figured on include 900 tons for the construction of a yard crane runway at the Pullman Company's works, 400 tons for a brewhouse at the Schlitz Brewing Company, Milwaukee; 2000 tons for the Orient Building, Kansas City, and 2000 tons for an extension to the Baltimore Hotel, Kansas City. In addition to these, there is between 10,000 and 12,000 tons of Bridge Material for Western railroads up for figures. Prices from store are quoted without change at 2.05c. to 2.10c., and mill prices, at Chicago, are as follows: Beams and Channels, 3 to 15 in., inclusive, 1.86½c.; Angles, 3 to 6 in., ¼-in. and heavier, 1.86½c.; larger than 6 in. on one or both legs, 1.96½c.; Beams, larger than 15 in., 1.96½c.; Zees, 3 in. and over, 1.86½c.; Tees, 3 in. and over, 1.91½c., in addition to the usual extras for cutting to extra lengths, punching, coping, bending and other shopwork.

Plates.—The sources from which any reasonably prompt mill shipments can be had are very few. As a result of this condition jobbers' stocks are being drawn upon for tonnage lots of unusual size. Besides the inquiries in the market last week for riveted Pipe requiring large Plate tonnage, the closure of a contract by the American Smelting & Refining Company for about 5000 tons of Riveted Pipe is reported. This is for use in Colorado. The Nevada Consolidated Copper Company, Ely, Nev., is asking prices on 46,000 ft. of 32-in. Riveted Pipe of ¼ in. and 3-16 in. Plates, which will amount to about 1800 tons. We quote for future delivery as follows: Tank Plate, ¼-in. and heavier, wider than 6¼ and up to 100 in. wide, inclusive, car lots, Chicago, 1.86½c. to 2.06½c.; 3-16 in., 1.96½c. to 2.16½c.; Nos. 7 and 8 gauge, 2.01½c. to 2.21½c.; No. 9, 2.11½c. to 2.31½c.; Flange quality, in widths up to 100 in., 1.96½c. to 2.06½c., base, for ¼-in. and heavier, with the same advance for lighter weights; Sketch Plates, Tank quality, 1.96½c. to 2.16½c.; Flange quality, 2.06½c. Store prices on Plates are as follows: Tank Plate, ¼-in. and heavier, up to 72 in. wide, 2.20c. to 2.30c.; from 72 to 96 in. wide, 2.30c. to 2.40c.; 3-16 in., up to 60 in. wide, 2.30c. to 2.40c.; 72 in. wide, 2.50c. to 2.65c.; No. 8, up to 60 in. wide, 2.35c. to 2.45c.; Flange and Head quality, 0.25c. extra.

Sheets.—Mills report that in face of the sustained demand but little headway is being made in diminishing the accumulation of back orders. The situation as to deliveries has not materially improved, and the demand upon store stocks is great. We quote mill shipments as follows, Chicago: Blue Annealed, No. 10, 2.01½c.; No. 12, 2.06½c.; No. 14, 2.11½c.; No. 16, 2.21½c.; Box Annealed, Nos. 17 to 21, 2.51½c.; Nos. 22 to 24, 2.56½c.; Nos. 25 and 26, 2.61½c.; No. 27, 2.66½c.; No. 28, 2.76½c.; No. 29, 2.86½c.; No. 30, 2.96½c.; Galvanized Sheets, Nos. 10 to 14, 2.81½c.; Nos. 15 and 16, 3.01½c.; Nos. 17 to 21, 3.16½c.; Nos. 22 to 24, 3.31½c.; Nos. 25 and 26, 3.51½c.; No. 27, 3.71½c.; No. 28, 3.91½c.; No. 30, 4.41½c.; Sheets from store: Blue Annealed, No. 10, 2.50c.; No. 12, 2.55c.; No. 14, 2.60c.; No. 16, 2.70c.; Box Annealed, Nos. 18 to 21, 2.80c.; Nos. 22 to 24, 2.85c.; No. 26, 2.90c.; No. 27, 2.95c.; No. 28, 3.05c.; No. 30, 3.45c.; Galvanized from store: Nos. 10 to 20, 3.30c. to 3.35c.; Nos. 22 to 24, 3.55c. to 3.60c.; No. 26, 3.65c. to 3.70c.; No. 27, 3.85c. to 3.95c.; No. 28, 4.15c.; No. 30, 4.65c. to 4.70c.

Bars.—The demand for Steel Bars is evenly maintained. A number of the larger implement interests have bought their season's requirements. The week's sales included some round tonnage lots running up to 5000 tons. Bar Iron is quieter, and is not commanding prices above Steel Bars. Quotations, Chicago, are as follows: Steel Bars, 1.76½c., with half extras; Iron Bars, 1.76½c.; Hoops, 2.16½c., extras as per Hoop card; Bands, 1.76½c., as per Bar card, half extras; Soft Steel Angles and shapes, 1.86½c., half extras. Store prices are as follows: Bar Iron, 2.10c. to 2.25c.; Steel Bars, 2c. to 2.10c.; Steel Bands, 2c., as per Bar card, half extras; Soft Steel Hoops, 2.35c. to 2.45c., full extras.

Merchant Pipe.—In none of the lines of finished products is the demand more insistent than for Merchant Pipe. Every mill in the country is crowded with orders, and prompt service from any source other than warehouse stocks seems out of the question. The National Tube Company has issued a new card of discounts on Tubular goods, making an advance of 2 points, or $4 a ton on prices, effective prior to March 8, when it withdrew all prices. The price of 7 to 12 in. Pipe is left unchanged. From store in small lots, Chicago jobbers quote 68 per cent. on Black Steel Pipe, ¾ to 6 in. About four points advance above these prices is asked for Iron Pipe.

Boiler Tubes.—The extreme scarcity of Merchant Tubes has created an extraordinary demand upon jobbers' stocks. Mills that are in position to furnish Tubes with reasonable promptness can easily command premiums over prices quoted. Mill quotations for future delivery on the base sizes are as follows: 2¾ to 5 in., in carload lots, Steel Tubes, 63.35; Iron, 50.35; Seamless, 49.35; 2½ in. and smaller, and lengths over 18 ft., and 2½ in. and larger, and lengths over 22 ft., 10 per cent. extra. Store prices are as follows:

	Steel.	Iron.	Seamless.
1 to 1½ in.	35	35	35
1¾ to 2¼ in.	50	35	35
2½ in.	52½	35	35
2¾ to 5 in.	60	47½	47½
6 in. and larger	50	35	..

Merchant Steel.—The demand for shapes and specialties used by implement makers, though not notably large, is good. Prices for Crucible Tool Steel have gradually strengthened and inside quotations are advanced ¾c. lb. Quotations are as follows: Planished or Smooth Finished Tire Steel, 1.96½c.; Iron Finish, up to 1½ x ½ in., 1.91½c.; Iron Finish, 1½ x ½ in. and larger, 1.76½c., base; Channels for solid rubber Tires, ¾ to 1 in., 2.26½c., and 1⅛-in. and larger, 2.16½c.; Smooth Finished Machinery Steel, 2.16½c.; Flat Sleigh Shoe, 1.91½c.; Concave and Convex Sleigh Shoe, 2.06½c.; Cutter Shoe, 2.45c.; Toe Calk Steel, 2.31½c.; Railroad Spring, 1.96½c.; Crucible Tool Steel, 7¼c. to 8c., and still higher prices are asked on special grades. Shafting, 50 per cent. off in car lots and 45 per cent. in less than car lots, base territory.

Cast Iron Pipe.—Although there are no new municipal

dettings involving large tonnages reported this week, the total of small lots booked constitute a satisfactory business. The Pipe foundries have orders enough in hand to keep them busy until well on toward midsummer. We quote per net ton, Chicago, as follows: Water Pipe, 4 in., $38 to $39; 6 to 12 in., $37 to $38; 16-in. and up, $36 to $37, with $1 extra for Gas Pipe.

Coke.—A fair demand is noted and prices are unchanged. Connellsville 72-hr. Foundry Coke is quoted at $3 to $3.25 at the oven for prompt shipment. Solvay Coke for forward deliveries is quoted at $6.50, Chicago.

Old Material.—Supported by a stronger demand from the rolling mills, Wrought grades, which were inactive last week, are moving more freely. Prices have not been appreciably affected, however, though the general tone of the market is stronger. The demand for Cast Scrap has fallen off considerably, but the offerings are light and prices continue to hold at about the same level. So long as Pig Iron prices keep soaring there is not likely to be any sharp recession in Cast Iron grades. The following quotations are per gross ton, f.o.b. Chicago:

Old Iron Rails	$24.50 to $25.00
Old Steel Rails, rerolling	18.50 to 19.00
Old Steel Rails, less than 3 ft	18.00 to 18.50
Relaying Rails, standard sections, subject to inspection	28.00 to 30.00
Old Car Wheels	25.00 to 25.50
Heavy Melting Steel Scrap	15.50 to 16.00
Frogs, Switches and Guards, cut apart	17.00 to 17.50
Mixed Steel	12.50 to 13.00

The following quotations are per net ton:

Iron Fish Plates	$19.50 to $20.50
Iron Car Axles	26.00 to 26.50
Steel Car Axles	21.00 to 21.50
No. 1 Railroad Wrought	15.25 to 15.75
No. 2 Railroad Wrought	14.25 to 14.75
Railway Springs	15.00 to 15.50
Locomotive Tires, smooth	17.00 to 17.50
No. 1 Dealers' Forge	13.00 to 13.50
Mixed Busheling	11.50 to 12.00
Iron Axle Turnings	11.50 to 12.00
Soft Steel Axle Turnings	11.50 to 12.00
Machine Shop Turnings	11.50 to 12.00
Cast Borings	10.00 to 10.50
Mixed Borings, &c	10.00 to 10.50
No. 1 Mill	10.00 to 10.50
No. 2 Mill	9.00 to 9.50
No. 1 Boilers, cut to Sheets and Rings	11.50 to 12.00
No. 1 Cast Scrap	18.50 to 19.00
Stove Plate and Light Cast Scrap	14.75 to 15.25
Railroad Malleable	16.00 to 16.50
Agricultural Malleable	15.00 to 15.50
Pipe and Flues	12.00 to 12.50

Metals.—The demand for Copper is of an even character and prices are still maintained. Though the prospect of a break in the market seems remote, there is a strong tendency among buyers to cover only for immediate needs. We quote as follows: Casting Copper, 25½c. to 26c.; Lake, 26c. to 26½c., in car lots for prompt shipment; small lots, ¼c. to ⅜c. higher; Pig Tin, car lots, 44½c.; small lots, 45c.; Lead, Desilverized, 6.50c. to 6.60c., for 50-ton lots; Corroding, 7.25c. to 7.35c., for 50-ton lots; in car lots, 2¼c. per 100 lb. higher; Spelter, 7.15c.; Cookson's Antimony, 27½c., and other grades, 26½c. to 27c.; Sheet Zinc is $8.60 list, f.o.b. La Salle, in car lots of 600-lb. casks. On Old Metals we quote: Copper Wire, 22c.: Heavy Copper Wire, 21c.; Copper Bottoms, 20c.; Copper Clips, 20½c.; Red Brass, 20c.; Red Brass Borings, 19c.; Yellow Brass, 17½c.; Yellow Brass Borings, 16c.; Light Brass, 13c.; Lead Pipe, 6c.; Tea Lead, 5½c.; Zinc, 5½c.; Pewter, No. 1, 30c.; Tin Foil, 37c.; Block Tin Pipe, 40c.

The Chicago offices of the Interstate Iron & Steel Company have been moved from the seventeenth to the sixteenth floor of the First National Bank Building.

Birmingham.

BIRMINGHAM, ALA., May 12, 1907.

Pig Iron.—Sales of Foundry Iron the past week have been somewhat less than during the preceding two or three, due to reluctance of producers to take on additional business. Inquiries are as numerous as ever, however, which would indicate that there are still many melters not covered for the last half. Sales of 3000 to 4000 tons for delivery during the first quarter of 1908 have been reported. These orders are said to have been booked at $18 to $18.50 per ton. Quite a number of inquiries for this delivery are understood to have been received, but so far as can be learned this is the only business which has been actually booked for next year. Prices continue about the same as last week, spot Iron commanding $22.50 to $23; May and June, $22 to $22.50; third quarter, $21, and fourth quarter, $20. Some sales have been made at an advance over $20 for the last quarter, and one sale for a small tonnage went at $22, but the lower price is the ruling figure and no trouble is experienced in placing desirable business at it. Stocks have been exhausted, and practically every furnace in the district is now loading its product as fast as made. On some of the furnace yards a few hundred tons of off grade Iron still remain, but there is even less of this than for a long time. The car situation is entirely satisfactory, and about the only complaint is due to an insufficient supply of raw material, caused by a scarcity of labor.

Cast Iron Pipe.—The manufacturers here have been notified of an advance by the roads north of the Ohio River, effective June 1. It is proposed to advance the rate to Chicago and points taking the same rate 40c. per ton, and to other points in about the same proportion. As practically all Pipe is sold at a delivered price and no provision made in contracts covering an advance in freight rates, this will work a great hardship on that industry here. Protests are being registered by those interested, but it is doubtful if the advance can be averted. The bookings at present are confined to the smaller buyers, with now and then an order for a larger tonnage. Prices are as yet unchanged, but it is more than probable that an advance for delivery during the second half of the year will soon be announced. The cost of Iron to the majority of Pipe manufacturers will be from $2 to $3 per ton more during the last half than it has been for the first half of the year, and an advance to equal this additional cost of raw material must, therefore, necessarily be made within the near future. Quotations on Water Pipe at present are about as follows per net ton: 4 to 6 in., $36; 8 to 12 in., $34; over 12-in., average, $31, with Gas Pipe $1 extra per ton.

Old Material.—The Scrap market is rather inactive. There is no demand for Wrought in this district, and the demand for Heavy Cast is less urgent than for some time. Dealers' quotations are approximately as follows per gross ton, f.o.b. cars here:

Old Iron Rails	$22.00 to $22.50
Old Iron Axles	18.50 to 19.00
Old Steel Axles	16.50 to 17.00
Old Car Wheels	20.50 to 21.00
No. 1 Railroad Wrought	18.50 to 19.00
No. 2 Railroad Wrought	13.00 to 13.50
No. 1 Country Wrought	13.00 to 13.50
No. 2 Country Wrought	12.00 to 12.50
Wrought Pipe and Flues	13.50 to 14.00
Railroad Malleable	13.00 to 14.00
No. 1 Steel	14.00 to 14.50
No. 1 Machinery Cast	16.50 to 17.00
Stove Plate and Light Cast	12.50 to 13.00
Cast Borings	8.50 to 9.00

Philadelphia.

PHILADELPHIA, PA., May 14, 1907.

There is no loss of strength in the prices of Pig Iron, which command the full figures of last week, and in some cases makers ask a little more than they did then. It is an experience without parallel in the entire history of the trade. With a production the largest on record and imports which bring the total supply to a rate at over 26,250,000 tons per annum, the scarcity is not perceptibly less than it has been at any time during the past several months. Neither are there any indications that producers of Pig Iron are disposed to discount their prices to any great extent for deliveries to be made six or eight months later on. This is the more remarkable because influences which were counted upon to strengthen the market have not developed as expected. It has always been held that the real source of prosperity in the United States originates in the product of the soil, and, if this theory is correct, 1907 is likely to be much below that of the year preceding. The Government crop report, issued on May 10, showed a probable deficiency in winter wheat of about 100,000,000 bushels, while the reports from the cotton districts are also extremely disappointing. Yet, in view of all this, more Iron is being used than ever before, and at prices which average higher than they have done at any time within the last 25 years. Moreover, while the demand for finished products is not by any means bad, yet there is no such pressure as there was during the fall of last year or the early months of 1907. The situation is therefore so anomalous that even the most experienced men in the trade have almost given up trying to analyze it. The trade is confronted with the largest supply of Pig Iron ever recorded at the highest prices for nearly three decades, also considerably imports of foreign Iron, offset by the influences to which we have already called attention, yet there is not the sign of a drop in Pig Iron, and what is even more remarkable is the fact that large consumers appear to be placing contracts for Pig Iron for months in advance at what are not far from the current prices for immediate deliveries. To make forecasts in regard to the future under present conditions would therefore be extremely hazardous, and about the only safe thing that the trade sees that it can do is to meet conditions as they arise from week to week, until there is something more tangible in regard to the outlook than can be discovered at the present time.

Pig Iron.—There is no new light that can be thrown on the situation at the present time. The demand is of the same general character as for several months: that is to say, a great deal of scrambling to get prompt shipments, for which premiums of more or less importance have to be

paid, according to the necessity of the buyer. The greatest activity has been in deliveries for the third quarter, for which prices are very strong and possibly a little dearer than they were a week ago. Third quarter deliveries are also coming in for a good deal of attention, and on these the prices of foundry grades are probably 25 cents dearer. The demand has been pretty well distributed in all grades of Iron, although sales of Foundry Iron were probably more numerous if not for as large tonnages as some of the other grades, although a considerable tonnage of Basic Iron has been taken by large consumers. The quotations at the foot of this paragraph represent the range of prices for the various dates for deliveries, and at the moment there does not appear to be much chance of more than fractional changes. The arrivals of Middlesbrough Iron are quite considerable, and five cargoes are expected to arrive within the next three or four weeks. Prices for this grade of Iron are strong, and in most cases 25 to 50 cents dearer than last week, as the deliveries can generally be made within 10 to 20 days from date of sale, which is an important consideration to those who are not certain of getting deliveries from their regular sources of supply. Since the beginning of the month probably 50,000 to 60,000 tons of Basic have been taken at prices which would be fairly represented by $23 to $23.25 for last quarter, and $23.50 to $24 for third quarter. There is still a good deal of inquiry, and it is not unlikely that several other large lots will be closed within the next few days. General quotations for deliveries in eastern Pennsylvania and adjoining districts are about as follows:

May and June Deliveries.

No. 2 X Foundry	$25.50 to $26.50
Gray Forge	22.75 to 23.25
Basic	25.00 to 25.50
Middlesbrough No. 3	22.50 to 23.00
Scotch Iron	24.50 to 25.00

Third Quarter 1907.

No. 2 X Foundry	$24.50 to $25.00
Gray Forge	22.50 to 22.75
Basic	23.75 to 24.25
Low Phosphorus	27.25 to 27.50

Fourth Quarter 1907.

No. 2 X Foundry	$23.50 to $23.75
Basic	23.00 to 23.50
Gray Forge	22.00 to 22.50

Ferroalloys.—Prices are a little easier than they were a week ago, and for shipments to be made during the last half of the year prices range from $63 to $65, according to date of shipment. May and June deliveries command about $67 to $68, but the general appearance of the market is somewhat heavy.

Steel.—There is a good demand for ordinary rolling Billets, and $32.50 to $33, delivered, would be a fair average price, although large lots might perhaps be shaded a trifle, according to quantity, date for delivery, &c. Forging Steel is active and readily commands $37 to $38 for deliveries at nearby points.

Plates.—The feeling is a little stronger in Plates, although it cannot be said that there is any great activity. Specifications are coming in freely, however, and mills are kept fully employed, and the general outlook is believed to be encouraging. Quotations for local deliveries are as follows:

	Carload. Cents.	Part carload. Cents.
Tank, Bridge and Boat Steel	1.93½	1.98½
Flange or Boiler Steel	2.03½	2.08½
Marine	2.23½	2.28½
Locomotive Firebox Steel	2.43½	2.48½

The above are base prices for ¼-in. and heavier. The following extras apply:	Extra per 100 lb.
3-16-in. thick	$0.10
Nos. 7 and 8, B. W. G.	.15
No. 9, B. W. G.	.25
Plates over 100 to 110 in.	.05
Plates over 110 to 115 in.	.10
Plates over 115 to 120 in.	.15
Plates over 120 to 125 in.	.25
Plates over 125 to 130 in.	.50
Plates over 130 in.	1.00

Structural Material.—In view of the settlement of the labor question in this city and vicinity the demand for Structural Material is somewhat better, and the mills are now getting a satisfactory amount of business at an average of slightly higher prices, although quotations are nominally the same as for several months past—namely, 1.83½c. to 2c. for Beams, Angles and Channels, according to specification.

Bars.—The demand for Steel Bars is very strong and deliveries cannot be made inside of 60 to 90 days. Consequently those who must have immediate shipment have to pay anywhere from 1.83½c. to 1.88½c., according to circumstances. Refined Iron is comparatively dull, and although prices are quoted at 1.83½c. for Best Refined Iron, it is difficult to get enough business at that figure to keep the mills fully employed. The usual cutting in prices is said to be resorted to by some of the mills which are not considered in the first rank of manufacturers.

Sheets.—Business continues good and mills are fully employed at firm and unchanged prices as follows, subject to the usual advance on small lots: Nos. 18 to 20, 2.80c.; Nos. 22 to 24, 2.90c.; Nos. 25 to 26, 3c.; No. 27, 3.10c., and No. 28, 3.20c.

Old Material.—Prices show little or no change from the quotations of last week, although some articles, such as No. 1 Steel, are extremely scarce. The mills are not disposed to pay the extreme figures, but deliveries of lots sold at lower prices than those now quoted are hard to secure, owing to many of the dealers having sold more than they are able to deliver. Hence dealers frequently pay more than consumers would be willing to do. Low Phosphorus Scrap and Car Wheels are scarce and command extreme figures for prompt shipments. The general range for deliveries in buyers' yards in this district is about as follows:

Steel Crops and Rails	$19.50 to $20.00
No. 1 Steel Scrap	19.00 to 19.50
Low Phosphorus	24.50 to 25.00
Old Steel Axles	21.75 to 22.25
Old Iron Axles	30.50 to 31.50
Old Iron Rails	27.50 to 28.00
Old Car Wheels	25.00 to 25.50
Choice No. 1 R. R. Wrought	20.50 to 21.00
No. 1 Yard Scrap	19.00 to 19.50
Long and Short	18.50 to 19.00
Machinery Scrap	20.50 to 21.00
Wrought Iron Pipe	17.00 to 17.50
No. 1 Forge Fire Scrap	16.50 to 17.00
No. 2 Light	11.50 to 12.00
Wrought Turnings	17.00 to 17.50
Heavy Machinery and Axle Turnings	17.25 to 17.75
Stove Plate	17.75 to 18.25
Cast Borings	16.00 to 16.25
Grate Bars	16.50 to 17.00

Pittsburgh.

PARK BUILDING, May 15, 1907.—(*By Telegraph.*)

Pig Iron.—The week under review has been quiet, due to the fact that makers of Pig Iron are well sold up, while consumers are nearly all covered for some time ahead. There is a moderate inquiry for Malleable Bessemer and Basic, but no important sales have been made. Bessemer and Basic Iron are held firmly at $23, at furnace, but some of the dealers have small lots of Basic, which might be picked up on the basis of $22.50, Valley furnace. Several large consumers of Foundry Iron have not fully covered their requirements for last half of the year, but prices quoted are so high that they are holding off. There is not much doing in Forge Iron, but the market is very firm. We quote Bessemer and Basic for last half of the year delivery at $23, Valley furnace, which after June 1 will be equal to $23.90, Pittsburgh, but note that some sellers are quoting as high as $23.50, at furnace, although so far no sales have been made at this price. We quote Northern No. 2 Foundry Iron for spot shipment at $25 to $25.50; for third quarter, $24 to $24.50, and for last half of the year, $23 to $23.50, Valley furnace. There is some inquiry for Foundry Iron for first quarter of next year on which several furnaces have quoted $23, at Valley furnace. We note a sale of 1000 tons of No. 2 Foundry at $24, Valley furnace, for last half delivery; 300 tons of No. 2 for June and July, at $25, Valley furnace, and 50 tons of No. 2 for spot delivery at $25.50, Valley furnace. We quote Northern Forge Iron at $22 to $22.25, Valley furnace, or $22.85, to $23.10, Pittsburgh.

Steel.—The supply of Steel seems to be a little better, some consumers reporting that slightly better deliveries of Billets and Sheet and Tin Bars are being made by the mills. A sale is reported of 6000 tons of 4 x 4 in. Bessemer Billets, deliveries being 1000 tons a month, July to December, at $29 at mill, equal to $30, Pittsburgh. We quote Bessemer Billets at $30.50 to $31, and Open Hearth Billets at $31.50 to $32, Pittsburgh. Sheet and Tin Bars in random lengths are held at $30.50 to $31, makers' mill, Pittsburgh or Youngstown.

(*By Mail.*)

General conditions in the Iron trade continue very satisfactory. While new business in some finished lines is not as heavy as in February and March, most of the mills are filled up with work for months ahead, and are not catching up much on deliveries. Unfavorable reports regarding this year's crops are now coming in, and if these are realized they will have an adverse influence not only on the Steel trade, but on all other lines of business as well. The situation as regards the supply of Pig Iron is very tight, both Bessemer and Basic being firmly held at $23 at Valley furnace for last half of the year delivery, with little to be had even at this unusually high price. Reports are that the supply of Steel Billets, Sheet and Tin Bars is slightly better, but prices continue firm. The National Tube Company has sent out a new list of discounts on Merchant Pipe, showing an advance in prices on all sizes, except 7 to 12 in., over those in effect March 8, of $4 a ton. Some heavy contracts for Line Pipe have been placed, and some large work on Riveted Pipe lines is in sight, which if it goes through will use an enormous tonnage of Sheared Plates.

Ferromanganese.—There has been another sharp decline in prices of foreign Ferro, and the market is somewhat demoralized. A local consumer bought last week about 100

tons for June and July delivery, on the basis of $66, Pittsburgh. For absolutely spot shipment slightly higher prices are asked, while for balance of the year delivery from $61 to $62, Baltimore, or $63 to $64, Pittsburgh, is being quoted.

Skelp.—The available supply of Skelp for prompt delivery is very light, all the mills having their product sold up for the next two or three months. Some of the leading Pipe mills are unable to get Skelp as fast as needed, and the supply does not promise to be better for some time to come. For forward delivery we quote: Grooved Steel Skelp, 1.85c. to 1.90c.; Sheared Steel Skelp, 1.90c. to 1.95c.; Grooved Iron Skelp, 2.20c. to 2.25c.; Sheared Iron Skelp, 2.30c. to 2.35c.

Steel Rails.—Last week the Carnegie Steel Company booked orders for about 28,000 tons of Standard Sections, of which 25,000 tons are for Pacific Coast delivery. The company also booked orders for about 2000 tons of Light Rails and is sold up to September or later. There is some comment on the fact that leading railroads so far have been slow in coming in the market with their requirements of Rails for 1908 delivery. It is claimed that this is largely due to the fact that the mills opened their books much earlier this year than usual, and for this reason the railroads were not and are not yet prepared to give out their estimated requirements of Rails for next year's delivery. It is believed that within the next month or two a heavy Rail tonnage will be placed for next year. The demand for Light Rails is fairly active, and the market is firm. We quote Light Rails as follows: $33 to $34 for 20 to 45 lb.; $34 to $35 for 16-lb., and $35 to $36 for 12-lb., at mill. Angle Splice Bars are held at 1.65c., and Standard Section Rails at $28, at mill.

Structural Material.—The past week has been quiet, no large contracts having been placed. The Youngstown Sheet & Tube Company is in the market for Steel buildings for two cast houses, and an engine and boiler house for its two new blast furnaces at Youngstown. Some bridge work aggregating about 1800 tons has also been placed. While a good deal of work is being figured on, it is slow in coming out. We quote: Beams and Channels, up to 15 in., 1.70c.; over 15-in., 1.80c.; Angles, 3 x 2 x ¼ in. thick up to 6 x 6 in., 1.70c.; 8 x 8 and 7 x 3½ in., 1.80c.; Zees, 3 in. and larger, 1.70c.; Tees, 3 in. and larger, 1.75c. Under the Steel Bar card Angles, Channels and Tees under 3 in. are 1.70c., base, for Bessemer and Open Hearth, subject to half extras on the Standard Steel Bar card.

Plates.—The Riter-Conley Mfg. Company has taken a contract for a riveted pipe water line involving 2000 tons of Plates for delivery at Boulder, Colo. The city of Los Angeles, Cal., has recently been granted permission by the State of California to build a water line from the mountains into Los Angeles. This line is to be an open cement ditch, and where this is not feasible it will be built of Steel Riveted Pipe, the line to be 10 ft. in diameter. A charter for a temporary railroad along the water line has also been granted for the hauling of materials, and the Pipe will be riveted on the ground as the line is built. If this project goes through, it is claimed that it will require upward of 100,000 tons of Steel Plates. There are numerous other projects under way in Colorado and California for water lines from the mountains, and the consumption of Steel Plates in the building of these lines promises to be heavy. The general demand for Plates continues active, and the large mills are filled up for months ahead. Some of the smaller mills can make prompt deliveries, for which they obtain premiums of $1 to $2 a ton. We quote: Tank Plate, ¼-in. thick, 6¼ in. up to 100 in. wide, 1.70c. to 1.80c., base, at mills, Pittsburgh. Extras over this price are as follows:

	Extra per 100 lb.
Gauges lighter than ¼-in. to and including 3-16-in. Plates on thin edges	$0.10
Gauges Nos. 7 and 8	.15
Gauge No. 9	.25
Plates over 100 to 110 in.	.05
Plates over 110 to 115 in.	.10
Plates over 115 to 120 in.	.15
Plates over 120 to 125 in.	.25
Plates over 125 to 130 in.	.50
Plates over 130 in.	1.00
All sketches (excepting straight taper Plates varying not more than 4 in. in width at ends, narrowest end being not less than 30 in.)	.10
Complete Circles	.20
Boiler and Flange Steel Plates	.10
"A. B. M. A." and ordinary Firebox Steel Plates	.20
Still Bottom Steel	.30
Marine Steel	.40
Shell Grade of Steel is abandoned.	

TERMS.—Net cash 30 days. For anticipated payments a maximum discount may be allowed at the rate of 6 per cent. per annum and for a longer time than 30 days interest shall be charged at the same rate per annum. Invoices paid within 10 days from date thereof, discount of ½ of 1 per cent. is allowable. Pacific Coast base, 1.60c., f.o.b. Pittsburgh, with all rail tariff rate of freight to destination added, no reduction for rectangular shapes 14 in. wide down to 6 in. of Tank, Ship or Bridge quality.

Sheets.—Some idea of the scarcity of both Black and Galvanized Sheets for early delivery may be formed when we state that as high as $3 to $5 a ton premium has been offered by consumers on condition of getting spot shipments, but which were turned down. The scarcity exists particularly in Galvanized Sheets, the American Sheet & Tin Plate Company not promising deliveries on these inside of 20 to 22 weeks. None of the mills is in position to make spot deliveries, being filled up for two or three months ahead. Several mills advise us that in the past week or so the supply of Sheet Bars has become slightly better, and is expected to show further improvement. Prices for forward delivery are as follows: Blue Annealed Sheets, No. 10 gauge and heavier, 1.85c.; Nos. 11 and 12, 1.90c.; Nos. 13 and 14, 1.95c.; Nos. 15 and 16, 2.05c.; Box Annealed, Nos. 17 to 21, 2.35c.; Nos. 22 to 24, 2.40c.; Nos. 25 and 26, 2.45c.; No. 27, 2.50c.; No. 28, 2.60c.; No. 29, 2.75c.; No. 30, 2.85c. We quote Galvanized Sheets as follows: Nos. 10 and 11, 2.65c.; Nos. 12 and 14, 2.75c.; Nos. 15 and 16, 2.85c.; Nos. 17 to 21, 3c.; Nos. 22 and 24, 3.15c.; Nos. 25 and 26, 3.35c.; No. 27, 3.55c.; No. 28, 3.75c.; No. 29, 4c., and No. 30, 4.25c. We quote No. 28 gauge Painted Roofing Sheets at $1.85 per square, and Galvanized Roofing Sheets, No. 28 gauge, $3.25 per square, for 2-in. corrugations. These prices are for carload lots, jobbers charging the usual advances.

Hoops and Bands.—Some new tonnage is being placed by consumers who are not covered by contracts, on which mills are able to obtain $1 to $2 a ton premium over regular prices for forward delivery, which are as follows: Steel Hoops, 2c., and Bands for all purposes at 1.60c., base, half extras, as per Standard Steel card. These prices are for carload lots, f. o. b. Pittsburgh, plus full tariff rail rate to point of delivery, an advance of $2 a ton being charged for less than carloads.

Cotton Ties.—Contracts for about 1,500,000 bundles of Cotton Ties have been placed for delivery this season at the official price of 95c. a bundle.

Tin Plate.—Only two plants of the American Sheet & Tin Plate Company are idle, while the independent mills are operating to as full capacity as the supply of Steel will allow, and all the mills are more or less behind in deliveries. A considerable tonnage of Tin Plate has been sold for delivery through last half of the year, some of the leading consumers having already covered their entire requirements for this year. No official intimations have been given out as to any change in the price of Tin Plate, which is expected to remain on the present basis for some little time at least. We quote for third and fourth quarter delivery as follows: $3.90 for 100-lb. Cokes, f.o.b. Pittsburgh, for 14 x 20 100-lb. Cokes, terms 30 days, less 2 per cent. off for cash in 10 days, on which price a rebate of 5c. a box is allowed for carload and larger lots.

Bars.—The demand for Steel Bars continues abnormally heavy, the leading interests continuing to report specifications and new tonnage in excess of shipments. A few of the smaller Steel Bar mills can make deliveries in two or three weeks, for which they get $3 to $4 a ton premium over the regular price of 1.60c. In the last two or three years numerous new uses have been found for Steel Bars, and the great activity in car shops explains to some extent the excessive demand. It is not unlikely that one or two of the leading Steel Bar interests will take up before long the matter of greatly increasing capacity. The demand for Iron Bars is fairly active, but prices are a shade easier, and some of the mills can make fairly prompt deliveries. We quote Refined Iron Bars at 1.75c. to 1.80c., Pittsburgh, and Steel Bars for forward delivery at 1.60c., base, half extras, f.o.b., Pittsburgh.

Spelter.—There seems to be an oversupply of this material, and prices are weak and lower. The demand is not as heavy as it was some time ago, and this explains to some extent the sharp decline in prices. We quote prime grades of Western Spelter at 6.35c., St. Louis, or 6.47½c., Pittsburgh, for prompt shipment.

Railroad Spikes.—The demand for standard sizes is quite heavy, and the mills are sold up for some time ahead. We quote standard sizes at $2.25 and the smaller sizes at $2.40 to $2.45 per 100 lb., f.o.b. Pittsburgh.

Merchant Steel.—The demand for Shafting, Machinery and Tire Steels is unusually heavy. Some municipalities have recently adopted wide tire ordinances, which have materially increased the demand for Tire Steel. Prices are firm, as follows: Smooth Finished Machinery Steel, 1.85c. to 2c., depending on quality; Flat Sleigh Shoe, 1.65c. to 1.75c.; Cutter Shoe, 2.15c. to 2.20c.; Toe Calk Steel, 2.10c. to 2.15c.; Railroad Spring Steel, 1.75c. to 1.80c.; Crucible Tool Steel, 6c. to 8c., for ordinary grades, and 10c. and upward for special grades. We quote Cold Rolled Shafting at 50 per cent. off in carloads, and 45 per cent. in less than carloads, delivered in base territory.

Merchant Pipe.—On March 8 the National Tube Company withdrew all prices on tubular goods, but has just issued a new card of discounts, which we give below and which shows an advance of 2 points or $4 a ton on prices effective prior to March 8, except on 7 to 12 in. Pipe, which is unchanged. Some very heavy orders for Line Pipe have been placed, the National Tube Company having just taken 120 miles of 18-in. Line Pipe and 10 miles of 14-in. Line Pipe for a natural gas line into Cincinnati. The company is completing this week shipments on 400 miles of 8-in. Line Pipe for an oil line from Indian Territory to the Gulf of Mexico. This order was placed early in January, and the company has made exceptionally good deliveries on it, when the congested

condition of its order books is considered. The Mark Mfg. Company has taken 10 miles of 16-in. Line Pipe for the Philadelphia Company. The Youngstown Sheet & Tube Company, Youngstown, Ohio, has taken an order for about 150 miles of 6 and 8 in. Line Pipe. We also note that an inquiry is in the market for 200 miles of 20-in. Line Pipe for extreme Western delivery. It is believed that the action of the National Tube Company in making public its prices on Pipe entered since March 8 and on new business taken from this time forward, will have a stimulating effect on the market and bring out a good deal of tonnage. All the Pipe mills are sold up from two to three months ahead. Official discounts on Steel Pipe as sent out by the National Tube Company under date of May 14, and which will also apply on all tonnage entered since March 8, are as follows:

Merchant Pipe.

	Jobbers, carloads. Steel. Black.	Galv.
	%	%
⅛ to ¼ in	65	49
⅜ in	67	53
½ in	69	57
¾ to 6 in	73	63
7 to 12 in	70	55
Extra strong, plain ends:		
⅛ to ⅜ in	58	46
½ to 4 in	65	53
4½ to 8 in	61	49
Double extra strong, plain ends:		
½ to 8 in	54	43

All above discounts are subject to 1 point on the base and 5 per cent. on the net.

Boiler Tubes.—On Tuesday, May 14, the National Tube Company issued new discounts on Boiler Tubes, which are to apply on all tonnage entered since March 8, and also on all new business, which, however, are the same as were in effect when prices were withdrawn. We can report that a heavy tonnage of both Merchant and Locomotive Tubes is being entered at these discounts, the market being extremely firm, and occasionally slight premiums are paid for prompt shipment. Discounts on Boiler Tubes for forward delivery are as follows:

Boiler Tubes.

	Iron.	Steel.
1 to 1½ in	41	47
1¾ to 2¼ in	42	59
2½ in	47	61
2¾ to 5 in	52	65
6 to 13 in	42	59

2½ in. and smaller, over 18 ft. long, 10 per cent. net extra.
2¾ in. and larger, over 22 ft. long, 10 per cent. net extra.

Coke.—There is still an excessive supply of Furnace and Foundry Coke for spot shipment, and low prices are being made. A good deal of Coke is loaded on cars which has to be moved, and in such cases sellers have to take whatever prices they can get. We note sales of strictly Connellsville Furnace Coke for spot shipment at $2.15 to $2.25 a ton at oven, while Coke made outside the Connellsville region and which runs a little higher in sulphur, has sold as low as $2 a ton at oven. Connellsville Furnace Coke on contract for last half of the year delivery is being offered at $2.60 to $2.75, and 72-hr. Foundry at $3.25 to $3.50 a ton at oven. The output continues heavy, the Upper and Lower Connellsville regions having made last week 416,217 tons.

Iron and Steel Scrap.—A moderate amount of new business is coming out in Scrap, and the tone of the market is firm, with slightly higher prices ruling on certain lines. Last week the Pennsylvania Railroad sold from its various shops east of Pittsburgh upward of 20,000 tons of Scrap, made up mostly of Car Wheels, No. 1 Cast Scrap, Heavy Steel Scrap, Railroad Malleable, Iron Axles and Steel Axles. Prices obtained, f.o.b. Pittsburgh, for Car Wheels were $26 per gross ton; for No. 1 Cast Scrap, $22; for Heavy Steel Scrap, about $18.50; for Railroad Malleable, $20; for Iron Axles, $21.50, and for Steel Axles, $22. This road still has about 6000 tons of Rerolling Rails to sell, which are to be closed up to-day (May 14). A good part of this tonnage will likely come to Pittsburgh. The Scrap list of the Baltimore & Ohio Road is out, and is to be closed this week. Dealers quote about as follows: Heavy Steel Scrap, $18 to $18.50, for Pittsburgh, Steubenville and Sharon delivery, prices depending on quality; No. 1 Railroad Wrought Scrap, $18.50 to $19, and No. 2, $18 to $18.25; Bundled Sheet Scrap, $16.50; Machine Shop Turnings, $15.50; Old Steel Rails, short pieces, for Open Hearth purposes, $18 to $18.25; Old Steel Rails, rerollers, $18.50; Old Car Wheels, $26 to $26.25; Steel Axles, $21 to $21.50; Old Phosphorus Melting Stock, $22 to $22.50; Grate Bars, $16.25 to $16.50; Cast Iron Borings, $14 to $14.25; No. 1 Cast Scrap, $22; Stove Plate, $16 to $16.25. All the above prices are per gross ton, f.o.b. Pittsburgh, unless otherwise noted.

Pig Iron Production in France.—The statistics of pig iron production in France in 1906 show a total of 3,319,032 metric tons, as compared with 3,076,712 tons in 1905. Foundry iron contributed to the total 591,275 tons; forge iron, 741,571 tons; Bessemer iron, 149,971 tons; Thomas (basic) iron, 1,784,726 tons; ferromanganese, 51,489 tons.

Cincinnati.

FIFTH AND MAIN STS., May 15, 1907.—(*By Telegraph.*)

Pig Iron.—Owing to the somewhat erratic conditions that prevail in the Pig Iron market, it is slightly problematical and rather difficult to arrive at a satisfactory conclusion as regards quotations and determine what the exact status is. Each furnace apparently has its own idea relative to the demand for its special brand of Iron, and promulgates through its various agencies a price in harmony with this view. This has resulted in a number of instances in which consumers have been quoted figures on third and fourth quarter requirements, established by the various producers, that show a spread of $1 or more a ton. There appears to be no doubt that quite a large percentage of consumers has not bought for the last half and is holding off, feeling that, perhaps, by the time the Iron for this delivery is actually needed conditions will have changed somewhat. To judge from present conditions, this is certainly some distance in the future, as every indication points toward a continuance of strength as it exists to-day. Inquiry in a general way is good, represented in most cases by small tonnage. A few sales of 1000 tons have been made during the week, but the principal part of the buying came forward in small lots and in the aggregate amounted to considerable. One local concern bought about 700 tons for delivery during last half. A melter in the central part of the State bought 2000 tons, divided equally between Northern and Southern delivery, running through the latter part of year. Freight rates from Hanging Rock District to Cincinnati are $1.15, and from Birmingham, $3.25. We quote for second quarter delivery, f.o.b. Cincinnati, as follows:

Southern Coke, No. 1	$24.75 to $25.25
Southern Coke, No. 2	24.25 to 24.75
Southern Coke, No. 3	23.75 to 24.25
Southern Coke, No. 4	22.75 to 23.25
Southern Coke, No. 1 Soft	24.75 to 25.25
Southern Coke, No. 2 Soft	24.25 to 24.75
Southern Coke, Gray Forge	21.75 to 22.25
Southern Coke, Mottled	20.75 to 21.25
Ohio Silvery, 8 per cent. Silicon	30.65 to 31.15
Lake Superior Coke, No. 1	24.65 to 25.15
Lake Superior Coke, No. 2	24.15 to 24.65
Lake Superior Coke, No. 3	23.65 to 24.15

Car Wheel Irons.

Standard Southern Car Wheel	$29.00 to $29.50
Lake Superior Car Wheel	27.50 to 28.00

Coke.—The market is slightly more active, and consumers are beginning to make contracts for the remainder of the year's supply, and occasionally for six months into next. Prices are a shade firmer. We quote the best brands of Connellsville and Virginia Foundry from $3.25 to $3.50, f.o.b ovens.

Finished Iron and Steel.—There is an increased interest shown by agricultural implement makers, and conditions along all lines are very satisfactory. Prices are strong and unchanged. We quote, f.o.b. Cincinnati, as follows: Iron Bars, carload lots, 1.93c., with half extras; smaller lots from store, 2c., with full extras. Steel Bars, carload lots, 1.73c., half extras, smaller lots from store, 1.95c., with full extras. Base Angles, carload lots, 1.83c. Beams and Channels, carload lots, 1.83c., base. Plates, ¼-in. and heavier, carload lots, 1.83c., base, and smaller lots from store, 2.25c. Sheets, No. 16, carload lots, 2.05c., and smaller lots from store, 2.60c.; No. 14, carload lots, 1.95c., and smaller lots from stock, 2.50c. Steel Tire, 1 x ¼ in. or heavier, 1.93c. in carload lots.

Old Material.—The situation as regards Scrap is rather quiet, and reports show no heavy tonnage sold during the week. Prices fluctuate considerably. We quote dealers' prices, f.o.b. Cincinnati, about as follows:

No. 1 R. R. Wrought, net ton	$16.50 to $17.00
Cast Borings, net ton	9.00 to 9.50
Steel Turnings, net ton	12.00 to 12.50
No. 1 Cast Scrap, net ton	17.50 to 18.00
Old Iron Axles, net ton	25.50 to 26.00
Old Iron Rails, gross ton	24.00 to 25.00
Old Steel Rails, long, gross ton	17.50 to 18.00
Relaying Rails, 56 lb. and up, gross ton	28.25 to 29.25
Old Car Wheels, gross ton	24.00 to 24.50
Low Phosphorus Scrap, gross ton	19.50 to 20.00

With a capital stock of $1,000,000, the Noiseless Car Wheel Company, Detroit, Mich., has been organized to manufacture a car wheel designed for the use of interurban and electric railroads, in the construction of which it is aimed to eliminate to a large degree the noise made by solid cast wheels. For the present the company will not build a manufacturing plant, but will contract with established plants for the making and assembling of the wheels at different points. The main office will be in Chicago. Ultimately the company proposes to manufacture not only the noiseless car wheel, but all other styles used by interurban and electric railroads. George H. Bryant is president, Chicago; August Ziesing, vice-president, Chicago; Bethune Duffield, treasurer, Detroit; Wm. B. McCorkle, secretary, Detroit.

Cleveland.

CLEVELAND, OHIO, May 14, 1907.

Iron Ore.—While Ore is moving from the upper lake ports in very good shape this week, the shipments during the early part of the month were a disappointment. The cold weather along the upper lakes has been largely to blame. Up to the last two or three days a large part of the Ore has been frozen and difficult to handle. The Ore freighters have also been delayed somewhat by storms, and when Lake Erie ports were reached further delay was caused by a shortage of cars. The car shortage still exists, but it is not so serious as a week ago, although it still interferes with the speedy unloading of vessels, as a large part of the Ore is loaded directly on the cars to be rushed forward to the furnaces. Nearly all the vesselmen are behind with their contracts as a result of the unfavorable conditions that have existed, and there will not be much wild tonnage on the market until they are up with their schedules. Weather conditions have now improved and Ore is coming forward from the mines in good shape, and this week's shipments from the upper lake ports will be heavy. Leading Ore shippers predict that the May shipments will be about the same as the shipments in May, 1906, but it is expected that the movement up to June 1 will be a little behind the total movement up to June 1 last year. There have been some inquiries for Ore during the past week, and some small sales have been made, but there is very little to be had. Prices are unchanged, being as follows at Lake Erie docks, per gross ton: Old Range Bessemer, $5; Mesaba Bessemer, $4.75; Old Range Non-Bessemer, $4.25; Mesaba Non-Bessemer, $4; Siliceous Bessemer, $2 to $2.75; Siliceous Non-Bessemer, $2.50.

Pig Iron.—The market is very strong, and prices have again advanced as a result of the scarcity of Iron for the entire last half of the year. The heavy buying during the two weeks around the first of the month has been followed the past week by the sale of a fair volume of tonnage, and at the present time there is scarcely any Foundry Iron left for sale in this district for delivery the last half of the year. Nearly all the furnaces are out of the market for the rest of the year, and the frequent inquiries that are still coming in show that many consumers have not yet covered. While the most of the large consumers recently made contracts for the last half, some of the smaller ones held off, and some of them may have trouble in getting Iron even at the higher prices now prevailing. A local furnace that still has Iron for sale is holding No. 2 Foundry at $25, at furnace, for the last half and at $24 for the last quarter. The same furnace reports sales during the week at $24 for the last half and for the fourth quarter, and some sales for the last half as high as $24.50. One furnace reports sales of 2000 tons No. 2 Foundry at $23, Valley furnace, for last quarter delivery. While furnaces are not anxious to sell for next year's delivery, some foundrymen are beginning to cover that far ahead, and one furnace reports sales of 25,000 tons No. 2 Northern Foundry at $22, Valley furnace, for delivery during the first and second quarters of 1908. A local interest reports heavy sales at western Pennsylvania furnaces at $23 and $23.50, at furnace, for No. 2 Foundry for last half delivery. The demand for spot Iron continues, and some sales in small lots at $25 for No. 2, at furnace, are noted. Many foundrymen are complaining of poor deliveries, in a few cases Iron contracted for March delivery not yet having reached the purchasers. An occasional sale of British Iron is being made at $26 for No. 3 Middlesbrough, delivered. Basic Iron is fully as strong as Foundry, and very little is left in this district either for spot shipment or for delivery in the last half. Sales of about 2000 tons of Basic in small lots were made at $24 for spot shipment. The furnaces are asking $23.50 for Basic for third quarter and $23 for the fourth quarter and for the first quarter of next year. There are some inquiries for Southern Iron, but very little, if any, is offered for last half delivery. Quotations for the last half of 1907, f.o.b. Cleveland, are as follows:

Bessemer	$23.90
Northern Foundry, No. 1	$24.50 to 25.00
Northern Foundry, No. 2	24.00 to 24.50
Northern Foundry, No. 3	23.50 to 24.00
Southern Foundry, No. 2	24.35
Gray Forge	23.00 to 23.50

Coke.—The market is weaker and there is very little demand, especially for Foundry Coke. Furnace Coke for prompt shipment is quoted at $2.50. Foundry Coke is selling at $3.25 to $3.35 at oven.

Finished Iron and Steel.—A large volume of new business has been placed on the books the past week, the new contracts for material for last half deliveries being heavier than they had been for several weeks previously. The demand is general, a good sized tonnage being placed for all kinds of finished material. Probably the heaviest orders placed were for Plates and Steel Bars. Specifications have also been heavy. None of the mills show any improvement in deliveries, although the majority of them seem to be getting no further behind, except the Structural mills. Steel Bar contracts for last half deliveries are being taken at 1.60c., Pittsburgh, or 1.69½c., Cleveland. For prompt shipment the mills are asking 1.85c. to 1.90c., Pittsburgh, for Steel Bars, but only a small amount of premium business is being done, and that only in special sizes, as the mill price for quick delivery is practically the same as the warehouse price. Iron Bars are in fair demand and are quoted at 1.70c. to 1.75c., Pittsburgh, although some mills will do a little better than 1.70c. for a good sized order. Fairly good deliveries can be made in Iron Bars. Plates are being sold on the basis of 1.70c., Pittsburgh, for future delivery, but the demand for Plates for early delivery is so heavy and the larger mills are so far behind that a large volume of business in Plates for quick delivery at premium prices is being done. For delivery in two or three weeks smaller mills are getting a premium of $4 a ton, but a little better price can be secured on a large order. The demand for Billets continues good, the mills asking $35 at mill for Open Hearth Forging Billets, base. There are additional inquiries for Light Rails for traction lines, and one sale of 700 tons for early delivery was made. The Structural situation is very satisfactory, both in new business and specifications, and deliveries are not quite as good as they were a few weeks ago. The implement manufacturers continue to come into the market to close contracts for Steel Bars for next year, considerable tonnage having been booked here at the prevailing price. Warehouse business continues heavy and no changes are noted in stock prices. Steel Bars are quoted at 1.95c. out of stock, and Iron Bars at 2c. Warehouse prices on Sheets are as follows: Blue Annealed, No. 10, 2.30c.; No. 28, One Pass Cold Rolled, 3.05c.; No. 28, Galvanized, 4.15c. The stock price on Boiler Tubes, 2¾ to 5 in., is 64 per cent. discount, and on Black Merchant Iron Pipe, base sizes, 67 per cent. discount.

Old Material.—The market remains quiet, and no increase in the demand is apparent. There are few inquiries and about the only activity is in purchases by dealers to fill old orders. Railroad Malleable and Railroad Wrought are a little weaker and Cast Scrap is a little stronger than last week. Otherwise prices are about stationary, and there is not much prospect of a change in the market in the near future. Dealers are not purchasing country mixed Scrap to replenish their stocks, being unwilling to lay in stocks at the present prices. Dealers' prices to the trade per gross ton, f.o.b. Cleveland, are as follows:

Old Steel Rails	$16.75 to $17.00
Old Iron Rails	24.00 to 25.00
Steel Car Axles	22.50 to 23.00
Old Car Wheels	23.00 to 23.50
Relaying Rails, 50 lb. and over	29.00 to 31.00
Relaying Rails, under 50 lb.	31.00 to 32.50
Heavy Melting Steel	16.50 to 17.00
Railroad Malleable	19.00 to 19.50
Agricultural Malleable	15.50
Light Bundled Sheet Scrap	15.50 to 16.50
Bundled Tin Scrap	15.00 to 17.00

The following quotations are per net ton, f.o.b. Cleveland:

Iron Car Axles	$26.00 to $27.00
Cast Borings	10.50
Iron and Steel Turnings and Drillings	12.50 to 13.00
No. 1 Busheling	14.50 to 15.00
No. 1 Railroad Wrought	16.50 to 17.00
No. 1 Cast	18.50 to 19.00
Stove Plate	14.50 to 15.00

Metal Market.

NEW YORK, May 15, 1907.

Pig Tin.—The strike of the longshoremen in this city has been the principal topic during the week and was responsible for an almost steady advance in price. At present there are only about 100 tons of Tin in New York store, although the Munster Castle and Indrasamha are anchored in the lower bay with about 700 tons aboard. When this Tin will be available for consumption, however, is a matter of conjecture, and it is of no more use on steamers anchored down the bay than it would be in London stores. That the strike is the cause of prevailing high prices is clearly shown by the fact that on May 14 spot Tin was sold at 43.75c., while end of May arrival could be had at 42.15c. By end of May arrival is meant Tin to arrive during May, but the Tin does not necessarily have to be delivered as long as the vessel is registered at the custom house. The direct London steamers seem to be having no difficulty in making deliveries, as the 225 tons which came in on the Minneapolis, May 7, have already been delivered, and the Minnehaha, which is due to-day, will probably have no trouble in unloading her 250 tons. Holders of Tin in this city, who are few in number, are not making guarantees regarding deliveries until Tin is unloaded and on dock. Some Tin will probably be shipped directly to Philadelphia or other ports where there is no trouble. The short supply in this country was bad enough as it was, but the strike has further seriously complicated matters. The arrivals, amounting to 1400 tons, include some 700 tons not yet unloaded, and there are afloat for American ports only 1163 tons. The London market is lower and weak, closing at £189 for spot and £185 for futures. Prices here are largely nominal and very irregular, but Tin can be had to-day, however, at 43.50c.

Copper.—Business is almost at a standstill, what little there is being confined to small lots for immediate consump-

tion. Prices are easier, although nominal, and for Lake Copper 24.75c. to 25.37½c. is quoted; Electrolytic, 24.12½c. to 24.37½c.; Casting Grades, 22.75c. to 23.75c. Much comment continues regarding the discrepancy between the price of finished products and that of the raw material, and it is evident from the marked falling off in orders for finished commodities that prices must shortly be revised. As yet there has been no inquiry for July or later deliveries, and it is becoming more and more evident that when the time arrives for making purchases to be delivered during the second half buyers will have plenty of sellers willing to take their orders, probably at marked concessions from figures now ruling. With the more favorable weather production is increasing, and smelters are no longer hampered by lack of raw material. There seems to be a daily increase in the amount of Copper available for American consumption. The export figures show this in a marked contrast to the situation a year ago. The exports for the first 13 days of the month were 5000 tons, while the imports not including Ores or Matte amounted to 4100 tons. For the first four months of the year the total exports amounted to 57,008 tons, a falling off of 6873 tons, as compared with the same period last year. The London market is practically unchanged for Warrants, spot being quoted at £102 and futures at £101 5s. It is interesting to note that the price of Best Selected has declined about £2, and is now held at £112 10s.

Lead.—There is little business, but prices are firm, and there are no concessions. In New York prompt shipments can be had at 6c. to 6.05c., but it would be difficult to secure any large amount at the inside figure. In St. Louis the price is unchanged, at 5.92½c.

Spelter.—Prices continue to decline, although they are largely nominal, owing to the absence of business. Offerings at 6.37½c., St. Louis, did not attract business. In New York prices are lower, at 6.50c.

Antimony.—The dullness continues and prices show recessions. Cookson's can be had at 22c. to 23c., Hallett's at 20c. to 21c., and outside brands at 18.50c. to 19.50c.

Ferroalloys.—The demand for Ferrosilicon keeps up and sales of fairly large tonnages have been consummated this week at $104 for future deliveries of 50 per cent. Prompt shipments from seaboard command a premium ranging up to $6, making the price for spot Ferrosilicon $110. There does not seem to be an active demand for 75 per cent., and the price continues unchanged, at $150. Some little business is being done in furnace grade, or 11 per cent., at $32.50 to $33. Ferromanganese shows some improvement. Ruling quotations, however, are unchanged, at $68 to $69 for prompt shipment and $65 to $67 for deliveries during the last half.

Tin Plate.—Coke Plates are in excellent demand, and recent inquiries for foreign oil tins lead to the belief that Tin Plate makers in this country have all the business they care for without meeting foreign competition where the drawback is allowed. Some sales of foreign Plates have been made this week, and prices are firm at 15s. The importations of Tin Plates for the first nine months of the fiscal year show an increase of approximately 10,000 boxes, as compared with the same period last year. Prices are unchanged at $3.90, f.o.b. Pittsburgh, and $4.09, f.o.b. New York, for 100 lb. IC Coke Plate, subject to the usual discount for quantity.

Old Metals.—There is a slightly better demand for Old Copper, although the following dealers' selling prices are largely nominal:

	Cents.
Copper, Heavy and Crucible	22.25 to 22.50
Copper, Heavy and Wire	22.00 to 22.25
Copper, Light and Bottoms	20.00 to 20.50
Brass, Heavy	15.50 to 16.00
Heavy Machine Composition	19.50 to 20.00
Clean Brass Turnings	14.00 to 14.25
Composition Turnings	17.00 to 17.25
Lead, Heavy	5.50 to 5.75
Lead, Tea	5.25 to 5.45
Zinc, Scrap	5.25

New York.

NEW YORK, May 15, 1907.

Pig Iron.—There has been a good deal of activity in Foundry Irons, a considerable number of 1000-ton lots having been bought. One Connecticut foundry purchased a total of 7000 tons. Buyers seem to have reached the conclusion that the supply may possibly be inadequate during the second half, and that they are to continue to undergo the tribulations as to deliveries from which they have suffered so much during the past nine months. We quote spot Northern Iron $25.50 to $26 for No. 1 Foundry, and $24.50 to $24.75 for No. 2 Foundry. For the second quarter we quote $25 to $25.25 for No. 1 Foundry, $23.50 to $24.25 for No. 2 Foundry and $22.75 to $23 for No. 2 Plain. No. 2 Southern Foundry is nominally quoted $26.25 to $26.50 for spot, and $23.25 to $23.75 for the third quarter. Middlesbrough is held at $23 to $23.50, ex-ship.

Steel Rails.—The buying of Rails for 1908 delivery has been on a liberal scale in the past week. Comment has centered on the Harriman contracts, amounting to 150,000 tons of Open Hearth Rails, with an additional 5 per cent. of No. 2 Rails, all taken by the Tennessee Coal, Iron & Railroad Company. The Southern Pacific Railroad takes 55,000 tons, the Union Pacific 55,000 tons and the Illinois Central 40,000 tons. Deliveries begin in March, 1908, and run evenly through the year at the rate of 15,000 tons a month. The Tennessee Company, with the 46,000 tons sold some time ago to the Louisville & Nashville, and counting the tonnage that must be carried over from this year, now has about 260,000 tons on its books for rolling in 1908. Reckoning a total of 360,000 tons for the year, there is still space open for 100,000 tons in 1908, and negotiations are pending covering practically all that amount. The sales to the Union Pacific and Illinois Central are of 90-lb. and to the Southern Pacific of 90 and 75 lb. Rails. The week's sales by the Illinois Steel Company include 25,000 tons to the Rock Island, 45,000 tons to the Chicago, Burlington & Quincy, 75,000 tons to the St. Paul, and 5000 tons each to the Nickel Plate and Chicago & Eastern Illinois, the Chicago Company having booked in all 162,500 tons for next year, while over 100,000 tons is under negotiation, with the expectation of being closed at any early date. The Pennsylvania Railroad's order for 1908 amounts to 142,600 tons, the allotment being reported as follows: United States Steel Corporation, 71,500 tons; Pennsylvania Steel Company, 30,500 tons; Cambria Steel Company, 30,000 tons; Lackawanna Steel Company, 10,600 tons. The Pennsylvania Company has made its specifications for next year's Rails more rigid in several particulars. A discard of 25 per cent. from the top of the ingot is called for, against a total of 12 per cent. from top and bottom, as now. The allowable camber in Rails before straightening is reduced, and a definite relation between the initial bloom section and the Rail section is specified, so that heaver Rails shall have more work in the rolls. It is understood that some business for 1908 is under negotiation for the Bethlehem Steel Company, but no sales are reported as yet.

Structural Material.—The volume of specifications and of new business going to the Structural mills is reported to be fully up to the expectations based on work figured on early in the year. Financial considerations seem not to have operated against building projects ,whatever part they may have in the falling off in railroad bridge contracts. The Manhattan approach to the Blackwell's Island bridge, calling for 6000 tons of Steel, was let to Snare & Triest, and the Steel will be furnished by the Pennsylvania Steel Company. The week has not been greatly prolific of new contracts. The 1000 tons of Steel for the new Boston & Albany shop addition at Springfield, Mass., went to the New England Structural Company. The New Haven road has not yet let the crossing work, amounting to about 4000 tons, for its Taunton and Harlem divisions. In New York City an important project in sight is a large business block covering the section between Fifty-seventh and Fifty-eighth streets and Broadway and Eighth avenue. We quote as follows on mill shipments, tidewater deliveries: Beams, Channels, Angles and Zees, 1.84½c.; Tees, 1.89½c.; Bulb Angles and Deck Beams, 1.99½c. On Beams 18 to 24 in. and Angles over 6 in. the extra is 0.10c. Sales are made out of stock of material cut to length at 2¼c. to 2½c.

Bars.—With a moderate volume of business, prices on Bar Iron are quite firm, at 1.79½c. to 1.84½c., tidewater. Steel Bars continue to be quoted at 1.60c., Pittsburgh, or 1.74½c., tidewater, but this is for delivery long in the future, and on reasonably early shipment buyers are obliged to pay 1.84½c., tidewater, or higher.

Plates.—The inquiry is probably a little better than it has been, but the volume of actual business has improved but slightly. Local sales agents are advised by the manufacturers that the vicinity of New York is about the dullest of any section of the country at the present time. The condition of business here is, therefore, no criterion as to the situation at the mills. Quotations for tidewater delivery are as follows: Sheared Tank Plates, 1.84½c. to 1.94½c.; Flange Plates, 1.94½c. to 2.04½c.; Marine Plates, 2.24½c. to 2.34½c.; Fire Box Plates, 2.75c. to 3.50c., according to specifications.

Cast Iron Pipe.—The market is not experiencing the usual May demand. Spring business appears to have been quite thoroughly anticipated by the heavy buying through the winter, and only small lots are now being purchased. As far as can be learned, the largest transaction of the past week called for 600 tons. The foundries are so well supplied with work that quotations are firmly maintained on the basis of $37 to $38 per net ton, tidewater, for carload lots of 6-in.

Old Material.—Heavy Cast Scrap, Stove Plate, Cast Borings and Heavy Melting Steel Scrap are moving freely and prices are firm on the same basis as quoted last week. The large offerings by railroads have been absorbed easily, so many dealers being short that good prices were realized. Those who bid slightly under the market got little, if anything. No. 1 Yard Wrought Scrap has shown an improved demand, occasional lots having been shipped out at prices a trifle better than recently quoted. Local stocks are steadily

decreasing, most of the Short Scrap going out in good quantities to Open Hearth Steel works. Dealers are confident that the local accumulation will shortly disappear. Wrought Pipe and good Heavy Turnings are selling well, while Old Car Wheels are particularly strong, with sales made for shipment to Canada. As long as the Pig Iron market maintains its strength a favorable influence will be exerted on the Scrap Iron market, and at present there are no indications whatever that prices will turn for the worse. Quotations per gross ton, f.o.b. New York, are as follows:

Old Girder and T-Rails for Melting	$16.00 to $16.50
Heavy Melting Steel Scrap	16.00 to 16.50
Old Steel Rails, rerolling lengths	18.00 to 19.00
Relaying Rails	27.00 to 28.00
Old Iron Rails	24.00 to 24.50
Standard Hammered Iron Car Axles	29.00 to 29.50
Old Steel Car Axles	20.50 to 21.00
No. 1 Railroad Wrought	18.50 to 19.00
Iron Track Scrap	17.50 to 18.00
No. 1 Yard Wrought, long	17.50 to 18.00
No. 1 Yard Wrought, short	17.00 to 17.50
Wrought Pipe	14.50 to 15.00
Light Iron	11.00 to 11.50
Cast Borings	12.50 to 13.00
Wrought Turnings	14.50 to 15.00
Old Car Wheels	23.00 to 23.50
No. 1 Heavy Cast, broken up	19.00 to 20.00
Stove Plate	16.00 to 16.50
Grate Bars	14.00 to 14.50
Malleable Cast	20.00 to 20.50

Iron and Industrial Stocks.

NEW YORK, May 15, 1907.

Considering the dullness in stock speculation and the somewhat depressing effect of the unfavorable forecast for crops, the prices of iron and industrial stocks have been well maintained. Fluctuations have not been wide, and prices on Monday and Tuesday of this week were quite close to the level of those prevailing on Thursday of last week. Sloss-Sheffield common has been conspicuously strong. The range of prices on active stocks during the period covered has been as follows: United States Steel common 36⅜ to 37¾, preferred 99¾ to 100½; Car & Foundry common 36¾ to 38¾, preferred 99⅞ to 100; Locomotive common 61¼ ex. dividend to 63¾, preferred 106 to 108; Steel Foundries preferred 38; Colorado Fuel 33½ to 35¼; Pressed Steel common 34½ to 36, preferred 92½ to 93; Republic common 26¼ to 27¼, preferred 85 to 85¾; Sloss-Sheffield common 56¼ to 59¾; Tennessee Coal 146¾ to 148; Can preferred 55. Last transactions in active stocks up to 1.30 p.m. today are reported at the following prices, showing some recession from those of yesterday: United States Steel common 36½, preferred 99¾; Car & Foundry common 37½, preferred 100; Locomotive common 62, preferred 106; Steel Foundries common 7⅛, preferred 38; Colorado Fuel 33¾; Pressed Steel common 35, preferred 92½; Railway Spring common 44; Republic common 26½, preferred 85; Sloss-Sheffield common 59; Tennessee Coal 148; Cast Iron Pipe common 35⅜, preferred 84; Can common 6, preferred 55.

Stockholders of the Westinghouse Electric & Mfg. Company, Pittsburgh, have received a circular letter stating that if payment on subscriptions to the new $5,000,000 stock issue, offered at $75, is made in full by June 3, the holders will receive on the new stock the dividend payable July 10, which amounts to $1.25 per share. The company's shipments for April, the first month of the fiscal year, exceeded those of April, 1906, by $1,083,147.

A special meeting of stockholders of the American Nut & Bolt Fastener Company, Pittsburgh, will be held June 25, to vote on a proposed increase in the capital from $150,000 to $200,000.

Pennsylvania Business Legislation.

HARRISBURG, PA., May 15, 1907.—Although over 150 bills affecting business and railroad interests die in committee, and the proposed heavy increase of taxes on stock of manufacturing companies will not be enacted, the State Legislature of Pennsylvania on the eve of adjournment took steps which may result in the passage of the employers' liability bill. The Senate, which has had this mischievous piece of legislation for several weeks, amended the bill on Monday night so as to lessen the scope of liability by providing that there could be no recovery for an accident due to the negligence of an employee whose duties are fixed by statute. Tuesday night that body suddenly reversed itself and, withdrawing its amendments, passed the bill on second reading in the same shape as it came from the House. The Legislature will adjourn at noon on Thursday, and strenuous efforts are being made for and against the passage of the bill.

Enactment of a law for a State Railroad Commission to have charge of rates and car discrimination is certain, but it is doubtful if any of the other bills affecting railroad interests will become laws, owing to the shortness of the time. Eminent domain for trolley companies is certain.

An important bill passed last week validates contracts made by corporations which, operating under a charter granted in another commonwealth, do not have officers or authorized agents in Pennsylvania. It is a bill somewhat similar to that passed recently allowing such corporations to own real estate in this State.

Boroughs are given the right to construct garbage furnaces by a bill which passed recently, the purpose being to authorize about 20 of the smaller municipalities to erect and operate these plants, a business which it is believed will expand in Pennsylvania because of the stringent provisions being enacted for the protection of the public health. A. B. H.

Progress of the Producer Gas Power Plant.—R. H. Fernald, professor of mechanical engineering at Washington University, presented a paper at the May meeting of the Western Society of Engineers, Chicago, on the "Status of the Producer Gas Power Plant in the United States." Details were given of tests made under Mr. Fernald's direction at the United States Geological Survey fuel testing plant at St. Louis, Mo. An endurance test of 24 days was made, without trouble from heating or the clogging of tar. The stop at the end of 24 days was made necessary by the collection of tar at the water seal valve, due to the arrangement of the piping, but the engine did not require cleaning. An average of 225.5 brake horsepower was maintained and the fuel consumption averaged 1.4 lb. of dry coal per brake horsepower per hour. The author stated that 20 companies are now manufacturing gas producers for power purposes, the majority of these being in position to give proper guarantees of their plants. About 150 producer gas power plants, ranging from 20 to 6000 hp., are now in operation in the United States. One company reports over 20 installations averaging 2000 hp. each, and nearly as many more contracted for or now being erected. Of the installations, 66 per cent. are suction plants which operate on anthracite coal, charcoal being used in a few cases. Bituminous coal is used in approximately 33 per cent. of the installations, but these plants probably cover 65 to 75 per cent. of the aggregate horsepower rating.

The convenience arising from the numbering of power plant units is not always appreciated. While operating engineers generally use the designations "No. 1 engine," "No. 2 generator," or "No. 4 boiler," the actual painting of numbers on the frames is not common. The present practice of keeping accurate records of the hours of service of all apparatus, from pumps to feeder circuits, and of charging repair work to separate machines, requires some means of distinguishing each piece of equipment, and there is none better than a legible number painted upon or attached to it. New men in the plant find such numbers a help in times of emergency, and the expense is so trifling that it is strange more plants do not follow the practice.

On May 9 a fire broke out in the plant of the Falls Hollow Staybolt Company, Cuyahoga Falls, Ohio, while the mill was in operation, and considerable damage was done to a portion of the roof of the main building. The fire was of little consequence and interfered but little with the operation of the mill. It caused no delay in the filling of orders, and within two days the plant was running night and day as heretofore.

The Machine Tool Builders' Convention.

OLD POINT COMFORT, VA., May 15, 1907.—*(By Telegraph.)*—The real scene of activity in connection with the Jamestown Exposition is centered in the attraction of the American machine tool world, for here are gathered in their semiannual convention the members of the National Machine Tool Builders' Association. The fear that the Exposition would prove a greater attraction for the members than their convention and thus tend to lure them from their meetings was not well founded. The Exposition is in so lamentably unfinished a state that the machine tool builders who came here are perfectly satisfied to remain at the Hotel Chamberlin, where, in addition to attending their own meetings, they have the advantage of witnessing the pomp and ceremony of the naval and military part of the Jamestown show and the always charming Fortress Monroe. The naval display is indeed a grand spectacle, and unfortunately is the only portion of the Exposition in shape for visitors. Nothing at the Exposition grounds is finished, and no one here has any notion that things will be in shape before August.

That little effort was made to interest the exhibition of machine tools is most apparent. It is worth noting, however, that the manufacturers who have taken space have their exhibits in much better condition than are the buildings or the grounds. When these latter deficiencies are corrected, and it will take from one to two months to do this, the show will be a magnificent one and doubtless reward the patience exercised in the meantime.

Opening of the Convention.

The machine tool builders began assembling here Sunday morning, and when the first session opened on Tuesday morning a good sized representation was on hand. President Woodward, whose oratorical proficiency is well known in the machine tool profession, as well as throughout the State of Massachusetts, where they grow orators as well as manufacture machine tools, delivered a most interesting opening address. The historic surroundings and the great events commemorated by the exposition furnished ample inspiration for his brilliant peroration, but when Uncle Sam's artillery at the fort nearby lent a realism by punctuating his remarks by discharging the great 12 in. guns, the members could not help expressing their amazement. This happened when Mr. Woodward said: "To-day, over this same scene, the tranquil waters of Hampton Roads, majestically float the tremendous battleships of steel, laden with cannon shot, still (boom barked the gun) representing many nations which are at peace with one another, all of which has been made possible by the brains, skill and energy of the machine tool manufacturers." Continuing, Mr. Woodward mentioned the visit paid by Secretary Montanus and himself to the organization meeting of the Society for the Promotion of Industrial Education, held in New York City last November. He stated that the secretary would read a report concerning this visit before the close of the convention. He also repeated a compliment paid the association last month by the Worcester Board of Trade, which tendered an invitation to President Woodward to be a special guest at its annual banquet. He mentioned the fact that the membership of the association now numbers 75 machine tool manufacturing concerns, and that the treasury shows a most satisfactory balance. He referred to the recent report of the Department of Commerce and Labor, Bureau of Census, which showed a magnificent growth of the machine tool industry during the period covered by the report, and stated that the growth since has been just as gratifying. The above portion of President Woodward's report provoked remarks on the part of several prominent machine tool builders, who stated that they had never sent any report to the department, which fact caused them to question the general reliability of this report. It was noted that the secretary be requested to communicate with the Department of Commerce and Labor, apprising it of the facts as outlined by the complaining members, and requesting that in the future greater care be exercised in the direction of completeness, as accuracy in this important statistical work is most desirable.

Deceased Members.

President Woodward touched the tender note of human sympathy when he spoke to the members, who stood with bowed heads, saying: "Gentlemen, let us pause for a few moments in our business drive and hustle and give silent thought to those of our members who have passed away and whose life's work is ended since our last convention, held in October, 1906. W. J. Hendey, president of the Hendey Machine Company of Torrington, Conn., died December 8, 1906, aged 61 years. Edward P. Bullard, president of the Bullard Machine Tool Company, Bridgeport, Conn., died December 22, 1906, aged 65 years. Joseph Flather, founder of Flather & Co., Incorporated, Nashua, N. H., and past president of the National Machine Tool Builders' Association, died February 3, 1907, aged 69 years. Harry C. Hoefinghoff, president of the Bickford Drill & Tool Company, Cincinnati, died March 2, 1907, aged 35 years. Each had contributed largely of skill and energy for the promotion of the machine tool industry. We honor and cherish a fond remembrance of each one." A committee, consisting of Frederick L. Eberhardt of Gould & Eberhardt, Newark, N. J.; C. Wood Walter of the Cincinnati Milling Machine Company, Cincinnati, and C. J. Wetsel of the Baush Machine Tool Company, Springfield, Mass, was appointed to draft suitable resolutions expressing the condolence of the association to the families of the departed members.

Uniform Cost Accounting.

The report of the Committee on Uniform Cost Accounting, which was appointed at the last convention of the association to investigate this subject, and of which Frederick Geier, president of the Cincinnati Milling Machine Company, is the chairman, was submitted by Wood Walter, as Mr. Geier was prevented from attending the convention. This report dealt with the subject in an elaborate chart, showing the elements entering into the the matter most thoroughly. It was accompanied by an elaborate chart showing the elements entering into the cost of production of machine tools, and illustrating their relations one to another. It was finally voted to continue the committee with the thanks of the association, and request it to publish the report and send it to the membership after certain slight revisions were made.

By way of inviting discussion on the subject of cost systems, President Woodward made a short speech touching upon the importance of the topic. He said that when times of depression arrive the real test of courage comes to a manufacturer. It is then that cost of products should be accurately known, so that the manufacturer may not unconsciously place his price below cost. If all machine tool builders were awake to the actual costs of their products, arriving at such information along uniform lines, the unintelligent competition of a falling market would be largely eliminated. He suggested that owing to the vital importance of the subject any light shed upon it by any one having accomplished something good in the matter would be of great benefit to the association. C. H. Norton of the Norton Grinding Company, Worcester, Mass., spoke of the mistakes of the cost keeping department which must be run down and checked by the shop force, citing a case where a screw costing 2 cents went through a department as costing $35 without any one in that department being able to detect so flagrant an error. E. Payson Bullard said that the system in vogue at the Bullard Machine Tool Company's plant at Bridgeport, Conn., for the last 10 years provided for such a contingency, as each piece of work, in addition to bearing the usual order slip and number, has also an identification tag which describes the piece of work, with the result that in the case of any misplacing of the tags the error will be automatically discovered before the work has proceeded very far in the shop. He said that the more important matters concerning which he desired enlightenment were the proper means of charging up depreciation and similar important items of expense. R. A. Franklin of Miller & Franklin, business economists of Boston, Mass., being called upon to explain what he termed a

model system for keeping account of costs in a machine shop and foundry, said the principle of his system was that it obtains the cost of the whole machine or lot of machines first, and then permits the developing or working out of details as the occasion may demand. Mr. Franklin's talk was elaborately illustrated by means of charts representing the various forms required to carry out the system. A vote of thanks was given him. President Woodward, in speaking of the disposition of the report of the Committee on Costs, stated that the committee does not consider its report complete, and would like further time to develop the matter. C. Wood Walter said as there are certain fundamental principles upon which experts widely disagree, the committee should have more time to collect the opinions of members on debatable questions. F. L. Eberhardt made a motion to the effect that the committee be continued indefinitely, and that the Executive Committee be given power to pass upon the future expenses which may be incurred by the committee in pursuing its work.

Wednesday's Session

opened with a discussion of the problem. "Responsibility of Foundrymen." Several members gave their views in emphatic fashion, setting forth experiences they were compelled to endure constantly owing to the lack of responsibility of the party in question. The natural self-confidence of the molder, it seems, often prompts him to take matters in his own hands, even to the extent of changing the position of cores in patterns, &c., when he thinks the pattern maker has made a mistake, with the result that the castings produced are wrong, and then the foundryman, it was said, despite the delay and annoyance he has caused, tries and often succeeds in evading the responsibility for such high handed work. In order to thresh the matter out, and through united effort on the part of machine tool builders attempt to remedy this evil, a committee was appointed to investigate the subject and report at the next convention of the association. This committee consists of C. H. Norton of the Norton Grinding Company, Worcester, Mass.; H. E. Montanus of the Springfield Machine Tool Company, Springfield, Ohio, and P. G. March of the Cincinnati Shaper Company, Cincinnati, Ohio.

Labor Notes.

The annual convention of the Amalgamated Association of Iron and Steel Workers, which opened in Toledo, Ohio, May 7, promises to be one of the most important conventions the organization has held in some years. A large number of puddlers have seceded from the association and have reorganized the Sons of Vulcan, which was the pioneer labor organization in the Central West embracing puddlers in its membership. It is believed that unless the Amalgamated Association succeeds in getting an increase in rates paid for puddling, more puddlers will leave the organization and affiliate with the Sons of Vulcan. There is also likely to be some trouble this year in arranging a scale for sheet mill hands, as a number of independent sheet mills that signed the Amalgamated scale will insist that they be allowed the same rate of wages for their sheet mills that prevails in the Vandergrift mills of the American Sheet & Tin Plate Company.

Press reports to the effect that the Mesta Machine Company, West Homestead, Pa., was seriously crippled on account of the machinists' strike have been greatly exaggerated. The company's machinists went out on strike, but many of their places have been filled, and the management expects within a short time to have a full force of men at work and will not be seriously inconvenienced in making deliveries to customers. The company states that it is in position to accept new business and give assurance of satisfactory deliveries.

The machinists' union of Providence and vicinity has made demands upon a number of the important machine shops for a 50-hour week, with no decrease of wages; an additional advance in wages of 5 cents an hour; time and one-half pay for overtime; and no compulsory piece work. The Builders' Iron Foundry, Providence, has a strike on, the reason given being the discharge from the company's employ of a number of union men. About 80 men went out, 60 machinists remaining at work. The company's foundry is not affected. A number of machinists employed by the Fales & Jenks Machine Company, Pawtucket, R. I., are on strike, but the case has no connection with the situation in Providence, the cause of the trouble being the refusal of the company to accede to a demand for a 10 per cent. increase in wages. Apart from these instances and the strike of boiler makers at Boston, and a few small moulders' strikes, the labor situation in New England is generally satisfactory, with little friction anticipated excepting in a few isolated cases.

The bimonthly settlement of wages of puddlers and finishers employed in mills that sign the Amalgamated scale was made at Pittsburgh last week. It was found that the average price on shipments of iron bars in March and April entitled puddlers to an advance of 25 cents a ton, or from $5.75 to $6, and finishers, 2 per cent. for May and June.

The bimonthly adjustment of wages of sheet and tin plate workers, under the scale of the Amalgamated Association, was made May 10. It shows an advance of 2 6-10 per cent. for sheet workers, the first advance they have received under the scale. The average price of shipments of Nos. 26, 27 and 28 gauges of sheets for March and April was 2.46 cents, and the base of the scale is 2.30 cents. The average price of shipments of tin plate for March and April was $3,72 a box. The base of the tin plate scale is $3.40 a box, and an advance of 2 per cent. is given for every 10 cents a box above the base. The tin workers got a 2 per cent. advance at the January settlement, another 2 per cent. at the March settlement, and the present advance makes a total increase in tin plate workers' wages since January 1 of 6 per cent.

The machinists' union of Cleveland, Ohio, has made formal demand for a nine-hour day, and a 10 per cent. increase in wages per hour, to take effect June 3. If the increase is granted the machinists will get substantially the same wages for a nine-hour day as they are getting now for 10 hours.

The new basis under which the union molders and coremakers of the Pittsburgh District are now working provides for a minimum of $3.50 a day to molders and coremakers, and an increase of 20 cents a day to men heretofore receiving $3.50 or over. A nine-hour work day is provided in the agreement.

The machine shops in the Pittsburgh District involved in the recent strike of about 1200 machinists are filling up their shops with new men, some of the shops being supplied with men by the National Metal Trades Association. The demands include a minimum of 40 cents an hour, a 10 per cent. advance for all machinists and semiskilled floor and bench hands, and a 50-hour week. The average wage in Pittsburgh machine shops is said to be the highest in the country, a number of men operating large machines receiving 45 cents an hour, while in some cases 52½ cents is paid.

The Hulett Car Dumper.—The Wellman-Seaver-Morgan Company, Cleveland, Ohio, has closed a contract with the Tidewater Railroad Company for one Hulett patented stationary car dumper for its Sewell Point terminal, Norfolk, Va. This car dumper will handle the entire coal traffic of the railroad, transferring it from cars to vessels. The method to be employed is entirely new as applied to this class of work. Coal arriving in 100,000-lb. capacity steel cars from the mines will be run into the dumper, which will transfer the coal into special steel hopper cars, absolutely self-clearing and capable of quick dumping. These transfer cars, after leaving the dumper, will be lifted by a powerful electric haulage up an incline on to the coal trestle. Each of these cars will be in charge of an operator, and when arriving at a point over the vessel's hatch they will dump electrically and instantaneously, and then drop by gravity to the end of the trestle, and back to the car dumper for another filling, thus doing away entirely with hand shoveling from cars to vessels, as at present. The plant will have a capacity for handling 1500 tons per hour, and is to be in operation May 1, 1908.

The Machinery Trade.

NEW YORK, May 15, 1907.

Business the past week developed a more active tendency, a large number of orders having been placed. While these generally covered small lots of tools, they indicate a buying movement that is likely to continue. This appears to be manifested, not only by the volume of inquiries received, but also by the many orders received for air compressors. It has been mentioned in these columns before that orders for compressors are usually followed by orders for machine tools, so the buying of such equipment to a considerable extent is an indication of additional business for the machine tool houses. Although its capacity is taken for some time to come, one of the largest manufacturers received more orders for air compressors the past week than the number it can produce in that length of time. Interest is being centered upon the railroads, which are displaying more activity in the trade. The two lists from Southern roads, which cover about 125 machines, are likely to be followed by one of good proportions from the New York Central Railroad, which has made a substantial appropriation for the purchase of machinery. Prices on certain classes of machinery were advanced 10 per cent. a few days ago by a leading maker.

On Tuesday and Wednesday the spring meeting of the National Machine Tool Builders' Association was held at Old Point Comfort.

Seaboard Air Line's List of Machine Tools for New Jacksonville Shops.

Specifications have been completed by the Seaboard Air Line for the machine tool equipment it intends to purchase for equipping its new shops at Jacksonville, Fla. The list, which covers over 100 machines, including several large electric traveling cranes and other heavy machinery, is as follows:

One 100-ton locomotive transfer table.
Three 200-hp. water tube boilers.
Six oil furnaces.
One heavy six-roll timber sizer, to dress 14 in. by 30 ft., four sides.
One heavy automatic car gaining machine.
One three-spindle vertical car boring machine.
One hollow chisel mortiser, vertical.
One wood turning lathe.
One band saw, heavy.
One band saw, light.
One No. 3 automatic cut-off saw.
One heavy swing cut-off saw.
One large rip saw.
One universal saw.
One hollow chisel mortiser.
One knife grinder.
One hand planer and joiner.
One surface planer.
One pair pneumatic flanging clamps.
One punch and shear.
One universal shear.
One plate bending rolls.
Three 100-lb. vertical belt hammers.
One 3000-lb. steam hammer.
One bolt header.
One coping and notching shear.
Three double head bolt cutters.
One single punch, to punch 1¼ in. in diameter holes through 1-in. plate.
One single punch, to punch ⅞-in. holes in ¾-in. steel.
One single cross cut shear.
One multiple punch.
One forging machine.
One 5-ton electric crane for machine shops.
One 5-ton electric crane for wheel and rod shop.
One 7½-ton hand crane.
Two 10-ton electric cranes.
One 60-ton electric crane.
One 12-in. slotting machine.
Three 34-in. vertical drill presses.
One 80-in. guide bar grinder.
One turret lathe.
One large vertical drill.
One 84-in. vertical boring a nd turning mill.
One 78-in. driving wheel lathe.
One 60-in. universal radial drill.
Four friction sensitive drills.
One open side planer.
Two 36 x 36 in. x 10 ft. heavy planers.
Three turret head bolt cutters.
One special heavy vertical drill.
One 18-in. brass lathe.
One No. 2 swing frame grinder.
Four special bolt lathes.
One heavy pipe machine.
One twist drill grinder.
One 50-ton forging press.
One 4-in. centering machine.
One piston rod grinder.
One universal tool grinder.
One horizontal milling machine.
One reamer grinder.
One car wheel boring machine.
One axle lathe.
One 30-in. by 12-ft. bed engine lathe.
One 22-in. by 10-ft. bed engine lathe.
Three 18-in. by 8-ft. engine lathes.
One engine lathe, triple geared, 42-in. by 16-ft. bed.
Two vertical boring mills.
One light shaper.
Two heavy shapers.
One universal milling machine.
Five double tool grinders.
One driving wheel press.

The new plant which the Seaboard Air Line is building at Jacksonville, Fla., and for the equipment of which this machinery is required, will cover considerable ground. The largest of the group of buildings, exclusive of the roundhouse, will be the machine and erecting shop, which will be 117 x 380 ft. The other buildings requiring mechanical equipment include a wheel, rod and tender shop, 66 x 260 ft., with extension 60 x 66 ft.; tin and smith shop, 61 x 181 ft.; passenger car shop, 90 x 300 ft.; car wheel, axle and smith shop, 28 x 150 ft.; boiler and engine room, 63 x 122 ft., and planing mill, 50 x 176 ft. There will also be a large roundhouse, with a small machine shop attached.

Machinery Requirements of the Norfolk & Western Railroad.

The Norfolk & Western Railroad is receiving bids on about a dozen machines for equipping its boiler shop. The list includes one gap mud ring riveter; one triple head stay bolt threading machine, with lead screws, to cut from ⅞ to 1⅜ in., 12 threads per inch; one single boiler plate punch, 54-in. gap, to punch ⅞-in. hole in ½-in. plate, with direct connected motor drive, motor to operate with direct current, 220 to 230 volts; one punching, beveling and trimming machine, with automatic spacing table, angle iron punching attachment, power feed, capacity 11-16-in. hole in ½-in. plate, maximum spacing 8 in., minimum 1¼ in., with 20-ft. table, furnished with 220 to 230 volt direct connected motor; one angle iron shear, capacity 6 x 6 x ¾ in. angles, with fixed base, direct connected direct current motor, 220 to 230 volts; one bending roll, without power raising or lowering attachment, capacity ¼ to ½ in. sheets, 8 ft. long, with direct connected direct current motor, 220 to 230 volts; one six-spindle multiple drill for mud rings and flue sheets, heads to operate independent of each other, 12 ft. 4 in. between housings, furnished with mud ring chuck attachment, with direct connected direct current motor drive, 220 to 230 volts; one 7½-ft. radial drill, with table, and without universal head, to drill up to 2-in. diameter, with direct connected direct current motor, 220 to 230 volts; one rotary beveling shear, to cut pieces from ⅛ to ¾ in. thick, with direct connected direct current motor, 220 to 230 volts; one angle iron bending rolls, capable of bending angles from 2 x 2 x ¼ in. up to 4 x 4 x ½ in., operated by direct connected direct current motor, 220 to 230 volts; one bar iron shear, 12-in. throat, to take bars ⅞ x 4 in., and from ⅞-in. diameter up to 2-in. diameter, with direct connected direct current motor drive, 220 to 230 volts; one 150-ton triple pressure hydraulic riveting machine, locomotive type, with 17-ft. gap, complete with hydraulically operated crane, and with a motor drive hydraulic pump and accumulator capable of handling this riveting machine and accompanying crane, and also capable of handling in addition to same 75-ton two-cylinder 30-in. stroke sectional flange press, all to be operated at 1500 lb. per square inch hydraulic pressure.

The Norfolk & Western Railroad is making extensive improvements to its shops at Roanoke, Va., including the erection of shops in which about $200,000 worth of new machinery and tools will be installed. At that point there is to be a new foundry, 140 x 740 ft., to be equipped with traveling cranes, &c., and to cost when completed $365,000; planing mill, 94 x 254 ft., to cost $40,000; cab shop, 75 x 200 ft.; extension to smith shop, extension to boiler and flue shops and wheel mounting shop. The company is making important improvements to its other yards and shops.

E. E. Loomis, vice-president of the Delaware, Lackawanna & Western Railroad, has been visiting the coal properties of the road, and, as a result, it is stated that the company will spend a large amount of money in the near future in improving its collieries and installing new machinery. Among other things, it is understood, that the improvements will include the installation of electric machinery for operating the mines.

The Cleveland, Cincinnati, Chicago & St. Louis Railroad has been buying considerable equipment of late. The company placed a large order for machine tools with a New York firm last week, and closed orders with a Pittsburgh house for some other machinery equipment. It is understood that the buying is principally for additions to the equipment of existing shops.

The Western Steel Car & Foundry Company is considering the erection of an extensive addition to its Anniston, Tenn., plant. The company is closely connected with the Pressed Steel Car Company, 24 Broad street, New York, and the officers of the latter corporation recently visited the Anniston plant to familiarize themselves with its needs. They decided that before long an extensive addition will be made to the works, in order to take care of the rapidly increasing Southern business. There is a strong demand in the South for wood freight cars with steel underframes, and it is understood that a plant to turn out that class of cars will be erected. As yet no definite plans have been prepared and nothing has been decided as to when work on the proposed addition will be commenced. It is stated that the question of machinery equipment will not come up for some time. The Western Steel Car & Foundry Company has a good sized plant at Anniston in excellent condition, and the

company has done a big business during the last two years. The details for the new plant will probably be worked out at Anniston.

Considerable machinery, such as lathes, radial drills, presses, milling machines, jib cranes and universal grinders, will be purchased by the Witte Iron Works Company, Kansas City, Mo., for equipping its new plant. Specifications for the equipment have not yet been prepared, and it will probably be some little time before the machinery is purchased. The company has purchased a site at Sixteenth street and Oakland avenue, on which it will erect a one-story brick, stone and iron building, 241 x 243 ft., which is expected to be completed by July 1. The new plant is made necessary by the growth of its business, to carry on which the present capital of $75,000 will be increased. The company builds gas and gasoline engines.

The Eberhardt Brothers Machine Company, Newark, N. J., is building a one-story addition to its plant to accommodate several new planers and a new engine room to increase the production of automatic gear cutting machines.

The trade will probably soon hear of machinery requirements for an addition which is to be made to the plant of the Balbach Smelting & Refining Company at Newark, N. J. The company has let contracts to the A. E. Sanford Company for the erection of a two-story building, 72 x 125 ft., which will be used for smelting and refining ores. The machinery details, it is stated, have not been arranged as yet. Arthur G. Green, engineer in charge, will probably do the purchasing.

The existing high price of copper has increased the mining operations in that metal to a material extent of late, and manufacturers of mining and smelting equipment have experienced a large demand for their production. One of the latest developments along that line is a project advanced by a number of New York men, including Congressman J. A. Goulden and Judge J. J. Brady of the Supreme Court of New York, who are interested in the construction of a large smelter at Index, Wash., which is close to Seattle. The companies controlled by the New Yorkers and their friends are the Sunset Mining Company and the Snohomish Mining Company, and they propose to build a smelter at a cost of $50,000 near their mines. The new smelter will, it is calculated, reduce about 100 tons of ore a day, and later on it will be materially enlarged. The company is also planning for the construction of 6 miles of railroad from Index to Seattle, in order to connect their interests with the main lines. No machinery has been purchased as yet, and those details are in charge of Col. W. R. Woodard, who can be addressed in care of the Sunset Mining Company. One of the interested parties who recently returned from Seattle declared that there are a number of smelters to be built in that vicinity within the next year or so, and it is said that a large amount of the business in the way of machinery purchases has been done in New York and Chicago.

The Long Acre Electric Light and Power Project.

W. H. Knight, chief engineer of the Long Acre Electric Light & Power Company, with offices at 74 Broadway, New York, is buying equipment for a power plant to generate 100,000 hp. The plant is to be located at 120th street and the East River, and the contract has already been let for a Wilkinson steam turbine, which, it is claimed, is to be the largest ever built. The company proposes to furnish power in competition with those already in the field, and a number of provisional contracts have been made, which will dispose of a large part of the power provided for. The company has floated $1,000,000 of 4 per cent. bonds, the proceeds of which will be used for the property, building and equipment of the new power house. The following are the officers and directors: President, Edgar Van Etten, vice-president, John C. Sheehan; secretary and treasurer, W. W. Walters; assistant secretary and treasurer, O. B. Corbin; general engineer, Walter R. Knight; general counsel, Henry W. King; Henry B. Harris, William Harris, William H. Lamprecht, Frank McKee, and G. Tracy Rogers.

Westinghouse, Church, Kerr & Co., 8 Bridge street, have been one of the heavy purchasers in the market during the past few weeks, especially in the line of power equipment, which, it is understood, is intended for the Hudson Company's Terminal Building. The inquiries out, however, call for more equipment than the specifications for that building show, and it is understood that the company has in hand another large power project near New York.

The Wythe Electric Light, Power & Warehouse Company, which owns factory and warehouse property at Wythe avenue and Centre street, Brooklyn, has been incorporated with a capital of $300,000. The company has under consideration a plan to furnish electric light and power to the tenants of its buildings, but just what will be done in that respect has not been entirely decided upon. It is understood that later on the company will come into the market for power equipment to a considerable extent. The directors of the corporation are Arthur Iselin, Lincoln Cromwell and G. H. Blish.

Inquiries are in the market for a 150-hp. engine and boiler, to be installed in a plant to be erected by Kohler & Campbell, at 601 West Fiftieth street, New York. Chris Able, engineer in charge, has offices with the firm at 619 West Fifth street.

Business Changes.

The Broderick & Bascom Rope Company, St. Louis, Mo., owing to increased business in this vicinity, has moved its New York office from 19 Murray street to larger quarters at 76 Warren street.

Chicago Machinery Market.

CHICAGO, ILL., May 14, 1907.

As a whole the demand for tools and machinery is remarkably well sustained. During the past week there has been an increasing number of inquiries in the market. Some scattered railroad buying is reported, which is believed to foreshadow the gradual placing of some large lists put out earlier in the season, on which purchases have hitherto been withheld. Dealers say that several inquiries from manufacturing concerns seeking to buy tools for immediate delivery have been withdrawn, when it was found that nothing better than from four to six months' deliveries could be had. While this condition characterizes the situation as respects requirements calling for prompt delivery of tools in most lines, it is not so universally the case as it was a while back. This is notably true of small drills, lathes and light shop tools, the supply of which is more plentiful. Dealers are optimistic in their views as to the prospects of a continuance of the present prosperous conditions of business throughout the year; at the same time they are buying more conservatively for requirements running far into the future.

Through the West, especially in the Rocky Mountain States and Territories and on the Pacific Coast, new enterprises in mining, irrigating and water power development are coming forward with surprising vigor. Many of these projects in contemplation or under way call for large installations of generative and motive power. A notable work of this character now approaching completion is the new plant built by the Northern Colorado Power Company, Denver, Colo., at Lafayette for the generation and distribution of electric light and power current to the chain of plants it controls and operates. This plant will have a capacity of 12,000 hp., supplied by four steam turbine units, capable of generating an overload of 9000 kw. An alternating three-phase 60-cycle current of 13,200 volts will be generated and carried to the points of service where it will be stepped down to about 2400 volts. The steam generative equipment consists of 10 boilers of 400 hp. each, which will be supplied with mechanical stokers and coal and ash conveying machinery. Coal is supplied from a mine adjacent to the power house. The Northern Colorado Power Company has purchased the light and power plants at Boulder, Longmont, Loveland, Berthand, Fort Collins, Greely, Louisville, Lafayette and Cheyenne. All the old power houses with the exception of that at Cheyenne will be dismantled and the equipment sold as soon as the new central station is ready for operation, which will be about June 1. This plant, including its transmission lines and extensive reservoir for water supply, will cost when completed more than $1,000,000.

The Chicago & North Western Railroad intends to make improvements at Pierre, S. Dak., which will cost in the neighborhood of $230,000, and which will necessitate the installation of considerable machinery. At that point the company intends to construct a large freight yard in whch will be erected a 10-stall brick round house, brick machine shop and several other buildngs, turn table, &c.

Bids for what is said to be the largest single contract for pumping machinery ever let in the West, or perhaps in the entire country, are now being considered by the Southern Pacific Company. This equipment is for use in connection with the new oil pipe line to be built from the Kern River oil field of the San Joaquin Valley to tidewater at San Francisco. The distance to be covered is 265 miles, and the line will be laid with 8-in. standard pipe, which has already been purchased, the National Tube Company having secured the contract. Owing to the heavy viscid nature of the Kern River oils, the problem of pipe line transportation is a difficult one, and was finally solved by the use of a system which includes the use of rifled pipe introduced by John D. Isaacs, consulting engineer of the Harriman lines. The pumping power capacity necessary to move this oil is greatly in excess of that required for the more fluid product of Eastern fields. Twenty-three large pumping plants will be installed along the line, each of which will be equipped with two powerful single or triple compound duplex oil pumps of special design, and two water pumps for injecting water into the oil main to facilitate the flow. Power will be supplied at each station by a 750-hp. battery of water tube boilers in three units, and two steel tanks of 55,000 bbls. capacity will be required at each of the 23 pumping plants for the storage of the oil. It is expected that contracts for this equipment,

involving an outlay of more than $1,500,000, will be closed within the next two weeks.

The Air Blast Gin Company, Dallas, Texas, patentee and manufacturer of the air blast system applied to ginning mills, is in the market for a lathe 8 ft. between centers, 16 ft. swing; milling machine suitable for cutting gears, and one wood mortising machine. The company will appreciate any information that may be given either on new or second hand machines of the kinds noted.

Beall Brothers, Alton, Ill., manufacturers of coal miners' tools and supplies, have recently added new brick buildings to their plant, which, as soon as equipped with new power machinery already purchased, will more than double the present output. Contracts have been let for two new boilers of 750 hp. capacity, and a 400 hp. four valve engine with a direct connected generator unit. When this equipment is installed all machinery will be driven electrically through individual motor units.

For the development of an extensive water power to be made available by the construction of dams on the Peshtigo River, which empties into Green Bay, the Northern Hydro-Electric Company has been incorporated with a capital of $2,000,000 at Oshkosh, Wis. The object of this installation is to generate and distribute electric current for lighting and power purposes to the cities of Menominee, Mich., Marinette, Green Bay and Oshkosh, Wis. It is estimated that the head of water obtainable will produce about 20,000 hp. Daniel W. Mead is the engineer in charge.

The use of producer gas engine sets for the operation of electric light plants is gaining ground. The Range Power Company, Chisholm, Minn., is equipping such a plant on the Mesaba Range with one 350-hp. triple cylinder vertical producer gas engine, with twin suction gas producers. The Parsons Water Supply & Power Company, Parsons, Kan., has purchased a duplicate installation of one 125-hp. vertical triple cylinder natural gas engine for operating a chain driven duplex power pump. Both of these equipments were furnished by the Weber Gas Engine Company, Kansas City, Mo.

The Western Kieley Steam Specialty Company, 112 Lake street, Chicago, Ill., is the Western branch of Kieley & Mueller, New York. A complete stock of steam and vacuum regulating valves, pump governors, steam taps, steam separators, &c., is carried in stock.

The Wells Brothers Company, Greenfield, Mass., manufacturer of Little Giant taps, dies, screw plates, bolt cutters and nut tappers, gauges, &c., has established a store at 54 West Washington street, Chicago, Ill., under the management of the Bordwell & Barton Company, where a complete line of taps, dies and screw plants will be carried and later on other tools added. The company has moved its New York store, which is in charge of A. Z. Boyd, from 56 Reade street to 126 Chambers street. The Chicago store makes the third store opened by the Wells Brothers Company. The one in New York was established first and shortly after that a store was opened at 149 Queen Victoria street, London, England, which is in charge of Theodore Butler. In the London store a complete line of the company's products is carried in stock.

Bids are invited by the Board of Commissioners of Cook County, Chicago, for the following machinery to be delivered to the Dunning Institutions at Dunning, Cook County, Ill.: One 20 x 10 in. engine lathe, with six turning and boring tools; one 14 in. crank shaper, with six facing tools; one 20 in. drill press, with one set of drills from ¼ to 1 in. inclusive; one No. 4 emery grinder complete with two wheels; one 6-in. pipe threading and cutting off machine, with nipple chuck; one No. 3 standard machinist's forge with necessary tools; one saw table and one pony planer. Bids will be accepted on both new and second hand machines, but if new, manufacturers' names must be given; if second hand, it must be stated where the machines can be seen. Bids will be received at the office of William McLaren, Superintendent of Public Works, until May 20.

The Iowa State Board of Control has purchased four Murray Corliss engines, three of which are 20 x 36 in. and one 16 x 36 in., direct connected to Westinghouse generators, for installation in State institutions at Marshalltown, Clarinda, Independence and Glenwood; also an 18 x 36 in. Corliss engine of the same type, direct connected to a Bullock generator, for the Iowa State College of Engineering, Ames, Iowa, and a 24 x 36 in. direct connected engine with Westinghouse generator for Newton, Iowa. This equipment was furnished by the Murray Iron Works Company, Burlington, Iowa.

Among the firms that suffered loss through the fire that destroyed the Wolensak Building, corner of Washington and Canal streets, Chicago, were E. C. Atkins & Co. and the Curtis & Co. Mfg. Company, manufacturers of saws. The former company has secured quarters at 75-77 Market street, and the latter has moved to 53-55 North Desplaines street. Both are now established and ready for business at their new locations. The Cleveland Twist Drill Company and the Norton Company and the Norton Grinding Company, which but recently moved their sales offices and warerooms to 48 and 46 South Canal street, respectively, were compelled by damage done to their building by this fire to secure temporary quarters pending repairs. They expect to be again installed at the above numbers within a few days.

The Abner Doble Company, engineer, San Francisco, Cal., has appointed Mitsui & Co. to act as its sole agents in Japan and its territories, Korea, China and Manchuria, for the sale of Doble tangential water wheels and hydraulic apparatus. The industrial development that is now taking place in the Orient, and the increasing demand for high grade water wheel machinery will make this co-operative arrangement an advantageous one for both parties. Mitsui & Co. are the largest and most progressive of the engineering houses in the Far East, and with their 35 branch offices are in a particularly good position to handle the water wheel products of the Abner Doble Company.

Philadelphia Machinery Market.

PHILADELPHIA, PA., May 14, 1907.

Some little falling off in the active buying of machine tools was to be noted in the local machinery market during the week just closed. There is a good volume of business under consideration, but there has also developed quite a strong tendency to withhold placing of orders. Buyers seem to be in doubt as to the general business conditions in the future, and the undercurrent of trade is probably a little weaker than it was some time ago. Those who are in the market for tools in larger quantities, which under ordinary conditions would be placed fairly promptly, are inclined to await developments. The financial situation, in the opinion of many, is not as good as might be desired; others look upon the recent crop reports as somewhat unfavorable for general business, while in other cases the prices of raw material seem to be on a rather unsatisfactory basis, so that, taking it all in all, many good propositions are held up pending a general clearing of the situation. The local dealers report a fair average of sales during the week, mostly, however, on single tools and particularly those of the medium and smaller sizes. The machine tool requirements of the Standard Cast Iron Pipe & Foundry Company are still unclosed, although we understand that tentative orders have been given for quite a large portion of the equipment. The question of deliveries seems to have been the important factor in the placing of this business, and from present indications it looks as if the matter would be closed at an early date. The railroads have bought but little recently in this territory. Some good business is expected to develop shortly from several of the Southern roads, but the local railroads have bought practically nothing. Inquiries continue fairly good, and if but a small proportion of those received could be turned into immediate sales the business would no doubt aggregate a large total.

Manufacturers have been able to catch up to a slight extent on deliveries of certain classes of tools. On others, however, they have been unable to hold present delivery dates. Some have booked quite a fair lot of orders, while others find the present demand a trifle quiet. All the plants, however, are well booked ahead, and are being operated at best capacity, in order to meet the demand for urgent deliveries. There has been quite a scarcity of good machinists in a number of shops, and more or less delay has been experienced from this cause. Dealers' floors are better stocked than they have been for some time; but, as a rule, it is not the desirable tools that can be had for quick shipment. There is a fairly good export demand for special tools, and builders of machinery of this class have booked quite a good volume of business. The demand for the generally termed standard tools has been very large. Business in machine shop specialties and power transmission machinery continues quite satisfactory, and manufacturers in several lines note a material increase in the volume of business done.

Dealers in second-hand machine tools report a good volume of business. There is a strong demand for tools of the better makes and of the larger sizes and heavier types, but dealers are unable to obtain a good supply of these tools, and the market is therefore rather bare of desirable tools of that class. Sales of the medium classes of second-hand tools have been fairly good, although the lighter tools seem to be more or less inactive.

The demand for boilers and engines has picked up to some extent, particularly for those of the larger and medium horsepowers, in both new and second-hand equipment. Some good business is under consideration, and the outlook is considered to be somewhat improved.

Castings, both iron and steel, are in good demand, and foundries are working at their best capacity. There seems to be an increased tonnage offered on almost every kind of castings, and but little improvement is to be noted in deliveries. Steel casting plants and manufacturers of gray iron machinery castings have as much work on hand as they can well take care of. Here and there a jobbing foundry is

in a position to handle a greater tonnage, but this is the exception rather than the rule.

The Frankford Arsenal, Philadelphia, will receive proposals in triplicate until June 14 for one 350-kw. engine or turbine generator, boiler and condensing apparatus. Information and specifications may be had on application to Col. Frank Heath, commandant.

The Auto Transit Company, Philadelphia, which will operate a line of electric passenger busses in this city, has awarded a contract, it is understood, to Smith, Hardican & Co., to erect a power plant and storage house at Thirty-first and Dauphin streets. The power house will be 82 x 169 ft. and the storage house, to be used for the storage and repair of the vehicles, will be 128 x 169 ft., both two stories. Plans for the building and equipment are by Dravo, Doyle & Co., engineers, Pittsburgh, Pa.

The town of Haddonfield, N. J., has commissioned J. H. Young, engineer, to prepare plans for a municipal electric light and water works system, the estimated cost of which is to be about $125,000.

The Hess Machine Works, builder of filemaking machinery, continues extremely busy. Inquiries both from foreign and domestic sources are good and cover a greater range of territory, particularly in this country, than ever before. Orders for export have recently been booked from customers in Italy, Sweden and Russia, while good domestic orders have also been taken from parties in New England and the Middle West, as well as from local concerns. Four sets of filemaking machines were recently shipped to France, four sets to England and one set to Germany. A sufficient number of orders are on the Hess Machine Works books to keep it occupied at its full capacity for a number of months.

The Carter Motor Car Corporation has under consideration the building of a large plant for the manufacture of automobiles at Berwyn, Md., on the Baltimore & Ohio Railroad. The proposed factory is to be 60 x 225 ft., two stories, and it is estimated that nearly $100,000 will be expended for plant and equipment, details of which are not yet ready.

The Reliance Steel Casting Company, Trenton, N. J., which was recently incorporated with a capital of $150,000, will erect a plant for making both open hearth and crucible steel castings. The plant will be located along the Pennsylvania Railroad near the latter's new shops. Plans for the building and equipment are now being prepared, and it is expected that the company will be ready to take up the matter of placing orders for equipment about June 1.

The Hilles & Jones Company, Wilmirgton, Del., has booked orders in the last few weeks for a number of railroad boiler shop outfits, as well as scattering orders from private boiler and bridge shops and steel car plants. There have been no extremely large outfits placed, but the various orders received aggregate a fair total. By means of recently improved facilities and enlarged capacity, this company has been able to reduce the required time of deliveries on standard sizes of punches and shears, plate bending rolls, &c., for shipment within six to ten weeks.

New England Machinery Market.

WORCESTER, MASS., May 14, 1907.

A strong, healthful tone has characterized the machinery market during the week. As usual only a part of the business offered could be taken, because early deliveries were specified. A satisfactory total has resulted, and several dealers report a week of very exceptional business, several sizable lots having combined with sales of a tool or two here and there to make large figures.

The country banks, so-called, comprising those not located in the great cities, are excellent barometers of business conditions, especially of business confidence. Here in New England banking men of the manufacturing cities give unanimous expression to the feeling that no change has occurred to influence them to a more conservative treatment of customers. No tendency is shown to reduce accounts or to decline loans which are satisfactory in general respects, and this is strictly true in the relations of banks and their customers among the manufacturers. It has been stated publicly that influential New York banking interests have sent out a word of warning to their correspondents in the smaller cities and the towns, advising that credits be looked after with stricter scrutiny and loans reduced. The New England banks have received no such warning, though the statement to the effect was made some weeks ago, and attracted general attention at the time. The banks of the older cities are generally extremely conservative, and it was from the heads of several of these institutions that the information was obtained as here stated.

Machinery dealers are figuring on the requirements of the General Electric Company for a large foundry to be erected at the plant at Pittsfield, Mass. Some 20 cranes are included, all small, with the exception of one large electric traveling crane, it is stated. The foundry will be a very large one, of a combination monitor and three-story design. It will be equipped with the most modern of labor saving machinery.

Walter Baker & Co., 45 Broad street, Boston, has awarded the contract for its new repair shop to be erected at Milton, Mass. It will be three stories, 50 x 125 ft.

It has been practically determined by the Page-Storm Drop Forge Company, Springfield, Mass., to erect new works at Chicopee, Mass. The detailed plans are not yet completed, but the buildings will be large and equipped with all modern conveniences for manufacturing and for the economical handling of materials and goods. A 300-hp. gas producer engine has been ordered from the Weber Gas Engine Company, Kansas City, Mo.

The Billings & Spencer Company, Hartford, Conn., manufacturer of drop forgings, drop forging machinery and small tools, is to erect a new factory building on Broad street, 53 x 115 ft., three stories.

A measure before the Massachusetts Legislature, known as the United Shoe Machinery Company bill, which has made some progress toward becoming a law, is attracting a good deal of attention in the machinery trade, because upon it is said to hang the fate of several new enterprises for the manufacture of shoe machinery. The bill denies to a company leasing machinery to manufacturers the right to insert in contracts a clause providing that the lessee shall use no other makes of machinery in his factory. The Supreme Court of Massachusetts has pronounced the bill constitutional before its passage, and the outlook is that it will go to the Governor for his signature. The United Shoe Machinery Company employs a form of lease such as the bill would operate against, consequently the independent shoe machinery builders have been at a great disadvantage in getting their machines into factories, because it is a case of furnishing a complete equipment or none at all, and it has not been found easy to get together all the machinery needed in a modern shoe factory. It is expected in the trade that if the bill becomes a law independent companies will go ahead immediately with the building of works and the buying of equipment for them and for existing shops.

It is generally accepted in Boston and throughout New England that the effort of the New York, New Haven & Hartford Roilroad to secure control of the Boston & Maine system will meet with success. While it is not settled, a consummation of the plan seems probable, and the market is naturally deeply interested, for with the change in control would undoubtedly come very sweeping improvements of the Boston & Maine system. If the New Haven management carries out the same policy it has adopted and followed since President Mellen took control, the Boston & Maine lines will be practically rebuilt, and other great improvements effected. The system controls practically all of the railroads of New Hampshire, Maine and northern Massachusetts, from east to west, as well as important feeders in Vermont. It consists of a consolidation of smaller roads, including several trunk lines, like the Fitchburg and Maine Central. While they have been maintained to their old standard they have not been materially improved, and railroad experts expect to see radical changes everywhere, if the present deal goes through. In Boston the improvements as planned will include a tunnel connecting the terminals of the two systems, passing under the harbor, from South Boston or the South Station to the Boston & Maine yards. The repair shops of the system are old fashioned, although containing some modern high class machinery, and it is believed that the New Haven management would make no delay in building the great repair shops which the Boston & Maine have been considering for years and for which land in Somerville was purchased last season. Of course the effect upon the purchasing department of the system will be watched with interest by the trade, for probably this department would be concentrated at New Haven.

The Blake Pump & Condenser Company, manufacturer of pumping machinery, Fitchburg, Mass., has been reorganized, and a Massachusetts charter will be secured. The business will be conducted in Fitchburg, and the plant will be put in the best of condition, with full equipment for the manufacture of the company's steam pump. Fitchburg capital has become interested in the enterprise, providing the necessary funds for equipment and the general conduct of the business. William H. Blake has been elected president; Alvah M. Levy, clerk, and Herbert E. Jennison, treasurer. The business was originally established in Fitchburg, but several years ago removed to Hyde Park.

The Stratton Rotating Engine Company, Fitchburg, Mass., will build a one-story addition, 22 x 80 ft., to the plant on Walnut street, recently purchased from the Putnam Machine Company. The new space will be occupied as a machine shop, and the company states that it will be in the market for the necessary new equipment.

The General Fire Extinguisher Company, Providence, R. I., has purchased the manufacturing property at Auburn, R. I., formerly occupied by the Corliss Safe Company, and later by the John Wales Wire Company, which was absorbed into the Washburn Wire Company several years ago. There is a little over 11 acres of land in the tract, having 1200 ft. frontage on the main line of the New York, New Haven & Hartford Railroad, from which ample spurs for switching cover the property. There are several fine buildings, includ-

ing a main machine shop 435 ft. in length, a large rolling mill, repair shop, storage building and other facilities. The General Fire Extinguisher Company states that it would be premature to announce at this time the additional buildings which it is planned to erect, as no definite plans have been made. But new lines will be added to the business, in part independent of automatic fire protection devices and materials. The plant will be operated in conjunction with the company's Providence works.

The F. C. Sanford Mfg. Company has removed its business from Hartford to Bridgeport, Conn., where it has purchased what is known as the MacFarlane plant. The company will continue to manufacture automobile parts and special machinery for the same, and a welding department has been added to the business, a suitable plant having been established which will handle sheet work of the heaviest kind, including machine parts, repairs to castings and special work of all descriptions. The present building contains 10,000 sq. ft. of floor space, and in addition the company is having plans drawn for a new factory building, 50 x 150 ft. and three stories.

The Bath Grinder Company, Fitchburg, Mass., has made an arrangement with the Stratton Rotary Engine Company of that city by which the Bath Company will continue to occupy its present shops. The Stratton Company recently purchased the building, and it had been presumed that its tenant would have to vacate the premises. Instead an addition to the building will be erected, which will give the owner the necessary room without disturbing the Bath Company.

The United States Fibre Leather Company, Hartford, Conn., which is to erect a new factory, 61 x 194 ft. and two stories, states that it will be in the market for a 100-hp. boiler and two 40-hp. type C Westinghouse alternating current electric motors.

The Perkins Machine Company, Warren, Mass., states that it is getting rapidly into condition where it can make quick deliveries.

Cleveland Machinery Market.

CLEVELAND, OHIO, May 14, 1907.

The past week has been a very satisfactory one to dealers in machine tools. They report a large volume of business and many inquiries. The number of sales of tools out of stock has been particularly large. The demand at present is largely for medium sized machine tools, dealers and manufacturers reporting that the demand for heavy machinery is not so active as it was a short time ago. The buying has been general, and the sales for the most part have been confined to small lots for additional plant equipment. There are, however, a number of inquiries in the market for complete equipment for new plants.

Users of castings are now making contracts to cover their requirements for the last half of the year, and foundrymen report that their customers are buying heavier than six months ago. With the heavy demand some of the foundries are having a hard time to make satisfactory deliveries to their old customers, and are seeking no new business. To add to their troubles foundrymen report a great scarcity of molders and other labor, and this scarcity is expected to increase as summer comes on.

The McMyler Mfg. Company has just erected a car dumper and two conveyors, all electrically operated, for the English Government in Natal, South Africa. John McMyler, the head of the company, has gone to Europe in search of new orders, and before his return will visit India and Australia. The company recently completed the erection of a car dumper for the Pennsylvania Railroad at Sandusky, Ohio, and has just secured a contract for the erection of a dumper for the Hocking Valley Railroad in Toledo, Ohio. It recently commenced the manufacture of the Odenkirk positive switch stands, and now has orders for about 5000 of the stands from leading railroads. The company reports a large demand for its clam shell buckets.

The Ohio Boiler Company has been organized at Girard, Ohio, with a capital stock of $50,000, to operate the plant formerly occupied by the Girard Boiler & Mfg. Company, which it has purchased. Several improvements have been made to the plant, and new machinery has been put in. The company is now in shape to turn out all kinds of heavy plate and light sheet structural work. The incorporators are J. M. Enright, C. E. Osborne, Joseph Smith, B. M. Job and Hugh McMaster.

The Warren Electric Company, Sandusky, Ohio, closed contracts with local machine tool dealers during the past week for considerable machine tool equipment, including a No. 24 plane Landis grinder, 42 in. King boring mill, 25 in. x 26 ft. Le Blond reduction lathe and a drill press.

The Youngstown Sheet & Tube Company is in the market with specifications for heavy tools and toolroom equipment. Some of the purchases are said to have already been made.

The Cowing Engineering Company will move its offices in a few days from the Citizens' Building to Collinwood, a Cleveland suburb, where it has just completed a large office building in connection with the new plant that the company now has under construction. The company is erecting a main building of steel and brick construction, 100 x 450 ft.

Government Purchases.

WASHINGTON, D. C., May 14, 1907.

The Isthmian Canal Commission will soon ask bids for a quantity of supplies, to include one 6-in. double spindle centering machine, and one horizontal drilling machine.

The Isthmian Canal Commission will receive bids until May 24, Circular No. 364, for pumps, forcing presses and other supplies.

The following bids were opened May 7 for supplies for the Isthmian Canal Commission, Circular No. 362:

Bidder 3, the American Trading Company, New York; 56, Industrial Works, Bay City, Mich.; 111, Brown Hoisting Machinery Company, Cleveland, Ohio.

Class 1. Four locomotive cranes—Bidder 3, $41,400, 180 days; 56, $39,820, 145 days; 111, $75,200, 210 days.

The following bids were opened May 7 for supplies for the navy yards:

Bidder 1, the American Supply Company, Mobile, Ala.; 6, American De Forest Wireless Telegraph Company, New York; 23, Berger Carter Machinery Company, San Francisco, Cal.; 73, Henshaw-Buckley Company, San Francisco, Cal.; 81, Harron, Rickard & McCone, San Francisco, Cal.; 94, Ingersoll-Rand Company, New York; 105, J. B. Kendall, Washington; 109, Knox & Bro., New York; 110, Laidlow-Dunn-Gordon Company, New York; 127, Massachusetts Wireless Equipment Company, Boston; 131, Massie Wireless Telegraph Company, Providence, R. I.; 135, Manning, Maxwell & Moore, New York; 137, Montgomery & Co., New York; 165, S. M. Price Machinery Company, Norfolk, Va.; 172, H. A. Rogers Company, New York; 176, John B. Roache, Brooklyn, N. Y.; 180, Sullivan Machinery Company, Chicago, Ill.; 181, Stone Telegraph & Telephone Company, Boston, Mass.; 193, Sherman-Brown-Clements Company, New York; 204, Telefunken Wireless Telegraph Company, Philadelphia, Pa; 206, Wm. R. Thompson, Brooklyn, N. Y.

Class 1. Two air compressors—Bidder 81, $8610; 94, $8698; 110, $6750; 180, $6885.

Class 2. One power brake—Bidder 23, $770; 73, $755.

Class 11. Two gas engines—Bidder 6, $20,700; 127, $18,400; 131, $14,000; 181, $19,766; 204, $16,450 and $15,450.

Class 211. Four 60-ton hydraulic jacks—Bidder 1, $499.90 and $465; 105, $430; 109, $529.60; 135, $544; 137, $440; 165, $436; 172, $516.60; 176, $468.68; 193, $524; 206, $548.

Bids were received as follows at the office of the Bureau of Yards and Docks May 4, for boiler room machinery for central power plant at the Pensacola Navy Yard:

C. L. deMuralt, New York, $39,880.

The Babcock & Wilcox Company, New York, $33,476; alternate proposals on own specifications, $34,676.

The Heine Safety Boiler Company, Philadelphia, Pa., $35,231.

The following awards have been made for supplies for the navy yards, bids for which were opened April 23:

The Vandyck-Churchill Company, New York, class 62, one hand power bending roll, $510.

The Niles-Bement-Pond Company, New York, class 63, one 100-ton wheel press, $835.

The Browning Engineering Company, Cleveland, Ohio, class 64, one 10-ton locomotive crane, $7800.

Under bids opened April 16, for supplies for the navy yards, the B. F. Sturtevant Company, Boston, Mass., has been awarded class 11, four outfits of ventilating fans and spare parts, $4226.20.

Under bids opened March 18, Circular No. 354, for supplies for the Isthmian Canal Commission, the Bucyrus Company, South Milwaukee, Wis., has been awarded class 2, seven steam shovels, $49,000.

Class 1, 15 steam shovels, has been cancelled.

Catalogues Wanted.—F. & J. Meyer, 116 Broad street, New York, exporters of machinery to the West Indies, desire catalogues and price lists of machinery and tools.

Tomas da Torre, La Curuña, Spain, desires catalogues and quotations on woven and spring mattresses with tools to set them up, and machinery and wire to make both the woven and spring mattresses.

The Reliance Steel Foundry Company, Trenton, N. J., has been incorporated with a capital of $150,000. The incorporators are Charles Parry Watson, W. H. Carr, A. Lincoln Steelman, C. H. Stauffer and C. Valentine. The new company will erect a plant on the Pennsylvania Railroad at Trenton, opposite the new railroad shops. It is understood that S. A. Watson, late of the American Steel Foundries will be president of the new company.

A New Export Record for Middlesbrough Iron.

British iron market reports for the first week in May emphasize the heavy shipments of pig iron from the Cleveland district. The total for April was 177,627 gross tons, as compared with 131,339 tons in April, 1906, and 87,953 tons in April, 1905. To North America the shipments, including a small tonnage for Canada, amounted to 42,974 tons, or double those of March shipments. To Germany the April shipments were 54,486 tons. For the first four months of the year the total shipments of pig iron from the Cleveland district were 582,497 tons, while the best previous record was 417,817 tons in 1899.

The stocks of Cleveland pig iron in Connal's public stores were decreased in April by 56,994 tons, leaving a total in store at the end of April of 400,825 tons. In 14 months the reduction of these stocks had been 350,000 tons, and in the same period stocks of pig iron in makers' yards had practically disappeared. The expectation 10 days ago was that the demand for British iron for shipment to Germany would continue good throughout the summer and the Cleveland iron trade looked for the volume of business to hold up for some time practically to the level of the first four months of this year, in view of recent reports from the United States. On May 2 No. 3 Cleveland G. M. B. pig iron for early delivery was quoted at 59 shillings 3 pence Middlesbrough. Warrants closed on May 2 at 59 shillings 7 pence. Cables to the United States on Monday, May 13, gave the closing price of warrants at 60 shillings 3 pence.

Hulett Ore Unloader Contracts.—The Wellman-Seaver-Morgan Company, Cleveland, Ohio, is just finishing up and putting into operation for the opening of navigation the following Hulett ore unloaders, all electric and of 10-ton bucket capacity: Five for the United States Steel Corporation's new plant at Gary, Ind., and two for its Lorain Steel Works plant at Lorain, Ohio. The same company has completed a plant of four 5-ton ore unloaders of the fast plant type and one storage and rehandling bridge with 7½-ton Hulett bucket for the Wheeling & Lake Erie Railroad Company, Huron, Ohio. It has also closed a contract with the Buffalo, Rochester & Pittsburgh Railroad Company for one Hulett 10-ton ore unloader, steam operated, to be ready for the season of 1908, to go on its docks at Buffalo, N. Y., making the second Hulett unloader on those docks. It has further closed a contract with the American Steel & Wire Company for two electric Hulett 10-ton ore unloaders and one storage and rehandling bridge operating a 10-ton Hulett grab bucket for its new docks and plant at Cleveland, Ohio. This makes nine electric Hulett ore unloaders sold to the constituent companies of the United States Steel Corporation during the past year, and 26 Hulett ore unloaders either in operation or contracted for.

An Employers' Paper for Employees.—In the May number of the *Silent Partner*, Cleveland, Ohio, the editor, David Gibson, outlines a plan for the publication of a paper in the mutual interest of employers and employees. Starting with the proposition that publicity is the remedy for many untoward conditions in the ranks of labor, growing out of misapprehension, the article advocates the issue by a recognized body of employers of a weekly newspaper that will be handed out with the pay envelopes. Such a paper, it is urged, should not be edited by the members of an employers' association, but it should be turned over to a practical newspaper man "with good brain and good digestion." The necessity of directing editorial criticism at employers now and again is suggested also. The Globe Machine & Stamping Company, Cleveland, as publisher of the *Silent Partner*, offers to defray the expense of a sample number of such a publication and the editor agrees to get out this first issue for circulation among employees and employers' organizations to illustrate the method and purpose of the proposed publication.

CONTENTS.

HARDWARE

IT is a matter for congratulation that the prosperity which the country has enjoyed for years continues with but little abatement. Factories are running to their fullest capacity and their product is booked for months to come. The problem still confronting many a manufacturer is how to meet the demand. It is not, however, to be supposed that these conditions will hold indefinitely. While making the most of existing prosperity there should be a looking forward to the days sooner or later to come when our active and overburdened markets will be characterized by comparative inactivity and dullness. Foreign trade, now too much neglected by our manufacturers, will then be eagerly sought. It is, however, a slow process getting a foothold in foreign markets, and the establishment of relations must be effected in advance of the urgent need of their trade.

The United Kingdom is distinctly a commercial and industrial nation. England is prosperous because of her foreign commerce, which extends not only to her colonies, but to practically every country on the globe. If she were dependent on her own population her prosperity would cease, and instead of adding to the surplus in her treasury there would be a growing deficit and the loss of her proud commercial leadership. An aggressive campaign is also going on in Germany, Austria, France and, in fact, in all the industrial countries with a view to conquering foreign fields. The result is already seen in the growing trade which is thus secured by them. Meanwhile the manufacturers of this country, with its great and perhaps limitless resources and its extraordinary development of producing ability, are, as a rule, giving their attention simply to the home trade, and with some notable exceptions are manifesting a practical indifference to foreign markets.

It must not be forgotten that the trading nations have worked for years to establish their foreign connections and have long been studying the wants and peculiarities of foreign markets. It should be impressed upon our manufacturers that business connections abroad cannot as easily be formed as between manufacturers in Pittsburgh and merchants in Chicago or St. Louis. With these it is mainly a question of quality and price and the need of goods. The manufacturer in Pittsburgh is known by the jobbers here, while to the merchants in other countries our manufacturers and the quality of their products are, as a rule, unknown. The merchant of India or China or Russia and many another market is also a man of to-morrow. He thinks and deliberates and investigates. He is averse to making changes. He is loyal to his sources of supply. He is slow, very slow, to make a change. If the time should come when we should need an outlet we would find it a task not of months but of years to form connections through which any considerable quantity of goods could be marketed abroad.

In the pressure of our home trade, and the turmoil and strife of our enormous and insistent demand, the tendency is to let others take the initiative in securing foreign business. It will, however, be the part of wisdom, and the first step toward a lengthened prosperity and wellbeing, if the manufacturers of the United States should take this matter up in earnest in these days of the flood tide of prosperity and not wait until the tide turns.

Condition of Trade.

There is no doubt that the late spring with the prevalence of exceptionally cold and rainy weather has had its effect on business, interfering as it did with outdoor activities and checking for the time being the normal course of enterprise and industry. It appears, too, that more or less injury has been done to the crops, and in this way may be farther reaching in its influence as involving some abatement of the prosperity of the farming sections thus affected, as unless higher prices should make good the shortage their purchasing power will be diminished, while the railroads in any case will lose in the tonnage they will be called upon to move. It is, however, too early and the advices in hand are too incomplete to base any predictions of serious crop failure and attendant disturbance on existing prosperity. There is indeed with the country's growth and its diversifying of agriculture as well as of manufacturing less reason than formerly to apprehend any serious failure in the crops or as serious results from any shortage. At the same time, fortunately, there is nothing in sight to forbid the anticipation of at least an average yield, with the possibility that it will have a marketable value equal to that of last year. It is to be borne in mind, too, that farmers are in excellent financial condition, and if they should be confronted with a disappointing harvest would not suffer anything like the inconvenience which attended short crops a few years ago. It is gratifying to note the cheerful reports which come from practically all jobbing centers. Notwithstanding the recent Wall Street disturbances, the rumors which have been current of coming reaction, the prevalence of bad weather, the apprehension of smaller crops, and a greater desire on the part of manufacturers in certain lines to book orders, the volume of business continues large and apparently unaffected, so that not a few of our jobbing friends are able to refer to one month and another as being ahead of last year's record. Many of the jobbers are indeed showing something of a conservative spirit in their buying, as they are not placing orders covering their requirements as far in advance as has been their practice during the past year or two. Regarded in this light business may in a certain sense be said to be relatively better with the jobbers than with those from whom they buy, so far as the volume of current business is concerned. There is a good deal of diversity in the position of the manufacturers in regard to the execution of orders. Some of them are still far behind their orders; many have more nearly cleared their order books, while others are in a position to make more prompt shipments than for some time. Meanwhile prices are steady, feeling the effect of high labor costs and high material. Only here and there are there indications of a slight relaxing.

Chicago.

The aggregate of business in Hardware lines for the opening week of May measures almost, if not quite, up to that of the first week of the preceding month, and is in excess of May business for the corresponding period of last year. Surprise is expressed that the demand should be so well sustained in view of the growing gravity of the crop situation. While it is conceded that the damage done is generally overstated in current reports, it is nevertheless becoming more clearly apparent that a very considerable shortage in wheat acreage must necessarily

result from the continuance of unseasonable frosts and other adverse causes. The wonder is that these conditions, widely heralded as they have been, have up to this time produced so little effect upon the general volume of trade. That a sharp curtailment of consumption has not followed is unquestionably due to the financial independence of Western agricultural communities, which within the past decade have been converted from a debtor to a creditor class. Prospects of moderate crop reverses are not nowadays regarded with the same degree of apprehension as was formerly the case. The movement of retail stocks of Wire Cloth has been retarded by the unseasonable weather, and as a result the pressure for deliveries has decreased; some of the factories are again seeking orders. An advance in Strap and T-Hinges is announced to take place on May 20, at which time prices will be raised from 10 to 15 per cent. Following an advance made earlier in the season, Revolvers were again advanced on May 8 50 cents each, which amounts to a raise of about 10 per cent. A notable increase in the demand for Roller Skates is reported, due it is said to the increasing number of adults seeking the outdoor recreation of roller skating on granitoid walks. Although weather conditions have not favored the early buying of Refrigerators, merchants report a satisfactory movement in these lines, and note a better demand for the higher grades of boxes. Activity in building construction is reflected in the strong demand for Wire Nails that, as yet, shows no signs of abatement. Altogether, the trade is enjoying a degree of prosperity, of which there is no cause for complaint.

Philadelphia.

SUPPLEE HARDWARE COMPANY:—Judging from the volume of business, we are led to believe that the average American is too busily engaged to realize the alleged danger signals, as pointed out by prominent railroad officials appearing in Wall Street, and we are sure the average merchant does not at all share their apparent distrust of the active man in the White House, nor fear that the net result of his work will bring about a recurrence of hard times. The average man likes a doer, and the man who makes anything else can make a few mistakes without losing the prestige that his successful efforts have accomplished in other directions.

If one judged by precedence, and the causes that have brought about other depressions and fluctuations in trade, he would surely have material for painting a very black picture, beginning with the terrible disaster at San Francisco, about a year ago, and winding up with the balmy month of May, which this year has buried the wheat in some sections of the country under 7 ft. of snow, and in other places has entirely ruined all growing crops with almost zero temperatures. One cannot but wonder what would have been the state of trade had weather conditions been normal.

The month of April shows a very fair increase over any similar month in the history of our own and a number of other houses that we have reports from. Had the spring been an early one, distributers would have been absolutely swamped and unable to have given anything like satisfaction to their customers. So the old saying that "it is an ill wind that blows nobody good" has been verified in this particular at least.

Collections show indications of improvement and the prospects for continued good trade are very encouraging.

New Orleans.

WOODWARD, WIGHT & CO.—The heavy rains of the last two weeks have been very unfortunate for all this section. It has held up contractors' work and caused them quite a little inconvenience and some loss. The cotton situation is not as good as it should be, still we must remember that even in the high lands in the cotton district, with poor soil and bad methods, they have been able to raise a cotton crop when it was planted from May 15 to 25. And the rich bottom lands all over the South, with a late fall, have been able to raise a crop planted as late as June 15 to 25 in times past.

The lumber situation aside from the export business is still in good shape, with plenty of orders on the books and bringing attractive prices. The export situation in lumber, however, is quite weak.

Real estate is holding up well here, and, in fact, some sales have been made in the last week or 10 days, which show values as high as they have been at any time in the last five or six years—that is, on improved property. Unimproved property is not bringing quite such good figures.

Money is still easy to get here in the regular business line. It is hard to get on a new proposition—that is, something outside of regular commercial channels—but the merchant and manufacturer are able to get all the accommodations they want at present, and at a reasonable rate.

It is quite probable that the rainy weather is now over; that cotton, sugar and rice will get into good shape if we have a late fall, with a good sized crop at a price of 10 to 12 cents for cotton, and good prices for the other two.

Collections are still hard, but are easing up a little.

St. Louis.

NORVELL-SHAPLEIGH HARDWARE COMPANY.—Cold and unseasonable weather continues. Underlying conditions surely must be very good, because notwithstanding the unfavorable weather business continues in good volume, showing an increase over the same period of last year.

The most surprising thing about the situation is that all those things that experience has taught us have a depressing effect upon trade have occurred, and still business continues good regardless of these unfavorable influences. We can also report collections as being unusually satisfactory.

Money seems to be more plentiful in the smaller towns and cities than in the large centers. Probably in these small places the leaders of finance stick closer to legitimate business and are not tempted by the alluring possibilities of profit in great financial schemes.

I wonder if those who manage great banks and trust companies have not been pound wise and penny foolish—that is, if they have not failed to encourage a great number of small but healthy enterprises in their desire to handle big deals. Has not the collateral of a man who desired to make a loan of $1000 been more rigidly scrutinized than the securities of a man who wanted a million?

If this line of reasoning is correct, if the bankers have awakened to this fact and now have a weather eye on their $1,000,000 loans, then does this not account, in large measure, for the present peculiar condition of affairs in which some of our big people seem to be having more or less trouble, while the little fellow does not seem to be worried?

All the advances in the past few months seem to be well maintained. We do not see weakness anywhere. We have just received notification of an advance on Automatic Revolvers. The manufacturers in this line display great confidence. A man buys "a gun" either to kill or to defend himself. In either case his life often depends upon the issue. Therefore a dollar or two in the cost of a weapon should cut little figure.

It is better that Revolvers should be high. High prices will reduce their sale. Low prices mean they are easily within the reach of the ignorant and weak-minded. We estimate the three largest Hardware jobbers in the country sell annually, of all kinds, 150,000 Revolvers. Stop and think of it! A Revolver lasts a lifetime. Nevertheless about 600,000 Revolvers are being bought in this country every year. Probably 3,000,000 of our population are "toting" a gun. Glance at the newspapers—murders, suicides and gun plays galore. To carry a gun seems to be the real "Dementia Americana."

Some States have legislated against the selling of pistols to minors. They have placed an almost prohibitive license upon local merchants. What does that matter? Catalogue houses can mail a Revolver to the most remote or inaccessible part of the United States at from 25 to 40 cents postage. What do they care about State laws? To stop them brings up the question of interstate commerce.

Catalogue houses are great distributers of Revolvers. The Revolver is an item that particularly appeals to

them. The postage is low. The goods are well known. They buy at the same price as the jobbers. They sell to the consumer at practically the same price that the jobber is compelled, by the Revolver Association, to ask the retail dealer.

If you are a retail dealer and are interested in this subject, just refer to any catalogue of any one of the leading mail order houses and compare the prices at which they are offering Revolvers with the prices you are paying for them. These prices hardly seem a square deal to the retail merchant when he carries a stock of the goods, and no doubt often acts as a sample shower and salesman for the mail order house.

Baltimore.

CARLIN & FULTON.—There is considerable complaint among the retail trade that the cold weather is interfering with the distribution of certain seasonable goods which have been taken into their stocks in readiness for warm weather.

Refrigerators and Freezers, Screen Doors and Windows, Hammocks and Lawn Swings always sell better with the thermometer at summer heat than when frost occurs nightly, as has been the case for some time. Vegetation is backward, and the truckers have suffered greatly, which in turn hurts the retail trade and interferes with collections.

Building operations, however, have been active, and the movement of general Hardware has been up to the average, and a few hot days will greatly stimulate trade in every direction. Prices continue firm, and in many lines have still an upward tendency, though all purchases are devoid of speculation and are for actual requirements.

Boston.

BIGELOW & DOWSE COMPANY.—The tussle between winter and spring for supremacy still continues. Yesterday the former had his innings, with snow and a cold easterly wind blowing from fields of ice and sundry icebergs held in reserve to the east of us. Thus far the sun has taken no part in the struggle, for his rays have been shaded by heavy clouds. There is hardly one fully developed leaf to be seen. That nature is loath to let them out these cold days and nights is probably the reason. Two solitary Lawn Mowers clipped the short grass in a sheltered park in the center of our city last week. Our spring is backward, but how much it is hard to estimate. That it is coming we all believe, but when no one can tell.

Add to the vicarious weather the troubles in the stock market and in the financial world and one wonders why business prospers and sales increase even beyond the standard established last year. Remittances, too, hold their equality. Since January and during the following months, notwithstanding the bad weather and the turmoil in the stock market, business has gone along in the even tenor of its way, undisturbed and steadily and persistently increasing the volume of sales.

Market prices have held firm and to-day there is an usual shortage in many lines of staple Hardware. Manufacturers complain they are short of steel and are handicapped in getting cars to ship their goods. The railroads are overcrowded, freights are delayed, and after waiting months to get goods shipped it is an unsolved problem when they will reach their destination. There are lots of complaints from dealers who have not foreseen present conditions and who cannot understand them as they now exist. Never before were the retail dealers so dependent on the stocks of the Hardware jobbers and never were they better served. This is a godsend, for the manufacturers are in no shape to fill rush orders.

How long present conditions will continue no one is wise enough to foretell. It seems safe to say that good times for the Hardware dealers will continue through the spring, summer and fall seasons.

The steel situation is in the hands of the United States Steel Corporation and the American Steel & Wire Company. Every one has implicit confidence in their conservative management. The conditions existing in the copper market indicate firm prices. Labor demands high wages. There are no surplus stocks at the factories. Nothing indicates a lower range of prices in the immediate future.

Portland, Oregon.

FAILING, HAINES & MCCALMAN.—As usual, the writer is extremely optimistic about the conditions of the North Pacific coast in general and this city and surrounding territory in particular. Business is going on as it never has before. There has been no let-up since the first of the year in the steadily increasing volume of business. The only trouble we are having is in the shortness of stocks, caused by the inability of the manufacturers to ship goods promptly and the difficulty of getting the goods from the transportation companies after they have been shipped. These same conditions, though in a smaller degree, are interfering with our customers. The transportation facilities of this territory are certainly inadequate for the business that they are endeavoring to handle. Steamers of all kinds are overrun with freight, and the freight departments of all railroads have absolutely more than they can pretend to handle. We are glad to say, however, the railroads are gradually getting the situation in hand, and we hope that some time we may be able to receive our goods promptly and to ship them in like manner.

Possibly as fair an indication as any of our immense activity in this territory is the fact that this city in the month of April stood at the head of all the cities of the United States in percentage of increase of bank clearances over the year 1906. The increase shows, if the writer recollects aright, about 75 per cent. When it is taken into consideration that last year's figures were a considerable increase over the year 1905, it shows that business conditions must be extremely good in this territory. These clearings are very little affected by real estate transactions as compared with the ordinary commercial banking business, which makes up the bulk of our clearings.

Crops promise well, especially small fruits and hops. With good crops and the probable good prices, prosperity is bound to continue in this section for at least nine months to come, and probably for a much longer time.

Nashville.

GRAY & DUDLEY HARDWARE COMPANY.—It has been many years since the people of the South have seen such a spring as we have had this season. It has been one continual spell of cold, rainy, unseasonable weather. There were only two days of sunshine during the entire month of April, and May up to date has been the same way. For quite a while it did not seem to have much effect on business, but it is now beginning to affect it quite seriously. All of the traveling men are complaining, and the volume of business is considerably curtailed. In a great many sections of the South cotton has been planted as many as three times, and still the planters have not secured a stand. If the weather changes soon and we have some warm sunshine things will greatly improve, but if it continues much longer like it has been it will be a serious blow to the entire country, as this unusual weather is not confined to any one section, but seems to be general all over the United States.

Prices in all departments of the Hardware trade are firm, and are being well maintained. Contracts are being made for next fall and winter's goods right along, and buyers seem to have a great deal of confidence in the future strength of the market. Collections are very satisfactory, in fact, money is coming in much better than we had anticipated.

Louisville.

BELKNAP HARDWARE & MFG. COMPANY.—The market conditions are singular enough. There seems to be an insistent demand that the pendulum swing the other way after describing its full arc on the side of prosperity, but notwithstanding the tugging process used in diverse interests, it seems fairly pegged at the limit of its swing and declines to descend.

The money market is undoubtedly growing easier, and

the rates of interest are not so high as they have ruled for several months; but as soon as Wall Street announces this fact some railroad magnate rushes in and wants for his road the modest sum of two or three hundred millions to build cars, lay tracks and buy terminals, to reconstruct bridges and enlarge tunnels, to add 5000 or 10,000 cars to its equipment, with monster locomotives to pull them; and then no wonder with the flood of new securities which are offered down goes the market and the people who look to that for their guidance tumble into the dumps again.

In the meanwhile the factories are all so busy that the promise of immediate shipment is hardly thought of. None of the larger buyers, we imagine, have the temerity to suggest such a thing after recent experience and the knowledge born of it. The season must be late or early or the trade be subject to some unusual influence, for rarely if ever has there been such a constant and imperative demand for goods in just this month of May.

To be sure, green bugs, boll weevils and army worms are reported here and there, and a wail comes up in the press dispatches with this condition. No doubt local complaints where they originate are serious enough. "Localities" are relatively, however, so much smaller than they used to be and the methods of contending against adverse conditions are so much more varied and dependable, that people look on a little pruning or thinning out by Dame Nature as a rather healthy process than otherwise.

A great menace to prosperity are labor disturbances, which seem to grow in acuteness, in the larger communities especially. The demands for wages commensurate with the increased cost of living might well be expected, and in almost every case they are in part at least granted where they are not coupled with conditions ofttimes out of all reason. The taking of violent measures into their own hands by the strikers, as was witnessed in San Francisco not long since, is a most disturbing factor. The inability or unwillingness of the authorities in the beginning to cope with the situation promptly is responsible mainly for the serious outbreaks later on, when the liberty enjoyed has been misconstrued into absolute immunity from penalty.

The very next thing to be readjusted in our social life is the management of cities. Nearly every public work of any magnitude is productive of scandal before it is finished. The example of the Pennsylvania State House is only on large lines what might probably be disclosed in nearly every city in the land.

Cleveland.

THE W. BINGHAM COMPANY.—Trade conditions in this locality are very good. We are receiving well assorted orders in large volume for general Hardware, Mining, Milling and Manufacturers' Supplies. There is a large amount of building going on all over the country, and numerous orders and inquiries are coming to us for the better class of House Trimmings. Factory Supplies are in good demand. A large amount of Merchant Pipe, Cast, Malleable and Brass Fittings are being sold to the retailers.

Spring goods in the household line are wanted in great variety, such as White, Blue and Gray Enameled Ware, Plain and Retinned Ware and Wooden Ware. Orders for Shovels, Spades, Forks, Rakes, Sheep Shears, Wool Twine, Hay Rope, Horse Hay Forks, Scythes, Snaths, Scythe Stones, Grass Hooks, and kindred goods are coming in freely.

By persistent efforts jobbers have accumulated good stocks of Carriage and Machine Bolts, Screws, Butts, Hinges and Files, so that the shorts and back orders are not as frequent as heretofore.

The cold and rainy weather in the past two weeks somewhat checked the trade with the retailer, but indications now are that we shall have warm and settled weather, which will stimulate trade very much.

Trade on the whole has been very satisfactory during the past four months, and we all look forward to the months to come with a feeling of a certainty of prosperous times.

NOTES ON PRICES.

Wire Nails.—New business continues to come into the mills in large volume. While they are still behind on shipments they are catching up to some extent. It is understood that premiums of 5 to 10 cents per keg are in some cases being paid for prompt deliveries. The prospect for fall trade is regarded favorable with a probability that the demand will be large. The market continues very firm. Quotations are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers	$2.00
Carload lots, to retail merchants	2.05

New York.—Improvement is noticed in shipments from mills, and also in transportation by the greater promptness with which Nails arrive at distination. Stocks in jobbers' hands are not yet brought up in all cases to full assortments, but improved conditions in this respect are anticipated in the near future. Local demand is good, especially in some of the outlying territory tributary to this city. New York quotations are: To retailers, carloads, on dock, $2.19; less than carloads, on dock, $2.33; small lots at store, $2.30.

Chicago.—Scarcity of Nails is still the cry. It was thought that there were signs a week ago of an easing up in the demand, but it comes again with new impetus, and it is now conceded that the end is not in sight. Under such conditions it can not be expected that the mills will show material improvement in deliveries while new business keeps on developing at the present rate. Quotations are as follows: $2.15 in car lots to jobbers and $2.20 in car lots to retailers, with an advance of 5 cents for less than car lots from mills.

Pittsburgh.—A largely attended meeting of Wire Nail interests was held last week, at which reports submitted showed that the present condition and outlook for the Wire Nail trade is very bright. All the mills are more or less behind in deliveries of Wire Nails, but are now catching up to some extent owing to lateness of the season and the natural falling off in new demand. It is believed that fall trade in Wire Nails this year will be exceptionally heavy. We are advised that premiums of 5 to 10 cents are being paid for Wire Nails for prompt shipment. Prices are unchanged, but very firm. Quotations are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers	$2.00
Carload lots, to retail merchants	2.05

Cut Nails.—Mills are catching up in shipments to some extent, but stocks are light at mill and in jobbers' hands. Quotations are as follows, f.o.b. Pittsburgh: Carload lots, to jobbers, $2.05; less than carloads, to jobbers, $2.10; less than carloads, to retailers, $2.20. Iron Cut Nails at points west of and including Buffalo and Pittsburgh, are held at 10 cents advance on Steel Cut Nails.

New York.—While some mills have advanced their price 5 cents per keg since the meeting of the Cut Nail Association on April 30, some of the mills not identified with the association are reported as offering Nails at less than the regular quotations. If these Nails are purchased to any extent they can be sold at a profit for less than regular quotations. Jobbers' regular quotations are on the basis of $2.30 for small lots at store.

Chicago.—The same conditions that have operated to delay deliveries are still existent, though perhaps in not so marked a degree. While the demand is fair, it is not so insistent as it was. Quotations are as follows: Iron Cut Nails, car lots, to jobbers, $2.30; to retailers, $2.35; Steel, to jobbers, in car lots, $2.20; to retailers, $2.25.

Pittsburgh.—The mills are still somewhat behind in shipments, but are now catching up to some extent owing to lateness of the season and the falling off in new demand. Stocks of Cut Nails held by the mills and also by jobbers are very light, and are badly broken. We understand some mills ask premiums of 5 cents a keg for

reasonably prompt shipments. Quotations are as follows, f.o.b. Pittsburgh: Carload lots, to jobbers, $2.05; less than carloads, to jobbers, $2.10; less than carloads, to retailers, $2.20. Iron Cut Nails at points west and including Buffalo and Pittsburgh are held at 10 cents advance on Steel Cut Nails.

Barb Wire.—Specifications on contract orders are being received in good volume by the mills, but new business is falling off, due to the lateness of the season. The market is firm, and quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Gal.
Jobbers, carload lots	$2.15	$2.45
Retailers, carload lots	2.20	2.50
Retailers, less than carload lots	2.30	2.60

Chicago.—The mills have as yet not been able to clear up their order books, and there is still much complaint of retarded shipments. It is expected that when the weather settles so that seeding and planting operations can continue without interruption the demand for Barb Wire will sensibly diminish. We quote as follows: Jobbers, Chicago, car lots, Painted, $2.30; Galvanized, $2.60; to retailers, car lots, Painted, $2.35; Galvanized, $2.65; retailers, less than car lots, Painted, $2.45; Galvanized, $2.75; Staples, Bright, in car lots, $2.25; Galvanized, $2.55; car lots, to retailers, 10 cents extra, with an additional 5 cents for less than car lots.

Pittsburgh.—New demand is falling off in volume due to lateness of the season, and this will allow the mills to catch up on belated deliveries. Specifications against contracts are coming in freely and shipments by the mills are heavy. The market is firm, but no change in prices was made at the meeting of the Wire interests held in Chicago last week. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Gal.
Jobbers, carload lots	$2.15	$2.45
Retailers, carload lots	2.20	2.50
Retailers, less than carload lots	2.30	2.60

Smooth Fence Wire.—Demand continues large and urgent, and mills continue to be behind on contract shipments. The market is firm, and quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads	$1.85
Retailers, carloads	1.90

The foregoing prices are for base numbers, 6 to 9. The other numbers of Plain and Galvanized Wire take the usual advances, as follows:

	6 to 9	10	11	12&12½	13	14	15	16
Annealed	Base.	$0.05	.10	.15	.25	.35	.45	.55
Galvanized	$0.30	.35	.40	.45	.55	.65	1.05	1.15

Chicago.—Wire of all kinds is in great demand, and because of scarcity caused by delayed shipments some factories are unable to work to full capacity. Quotations are as follows: In car lots, to jobbers, $2, f.o.b. Chicago, and to retailers, $2.05.

Pittsburgh.—Demand for Smooth Wire from Fence manufacturers continues very urgent, and all the mills are still more or less behind in deliveries. It is probable new demand will soon show a falling off and this will allow the mills to catch up on contracts, on which they are still considerably behind. The Wire interests held a meeting in Chicago last week, but made no change in prices, which, however, continue very firm. We quote f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads	$1.85
Retailers, carloads	1.90

The foregoing prices are for base numbers, 6 to 9.

Strap and T Hinges and Butts.—Announcement has been made by several manufacturers of Strap and T Hinges and Wrought Butts that a concerted advance has been decided on, to go into effect May 20. It is understood that on Strap and T Hinges the change proposed amounts to about 10 per cent., but that on Butts the advance will be slight, ranging from 2½ to 5 per cent.

Cast Butts.—Considerable demand is noticed for Cast Butts, which many buyers prefer for some purposes. The market supply seems to be light and prices are firm, with an advancing tendency in the quotations of one or more manufacturers. The market generally may be represented by discounts of from 70 and 10 to 75 per cent.

Paris Green.—Manufacturers' prices are without change, as quoted below. The cool weather in this section has retarded the growth of vegetation and demand is light. Manufacturers' quotations are as follows, ubject to change without notice, on the basis of 5 tons and over:

Arsenic Kegs	26 c.
Kegs, 100 to 175 pounds	26½c.
Kits, 14, 28 and 56 pounds	27½c.
Paper Boxes, 2 to 5 pounds	27½c.
Paper Boxes, 1 pound	28 c.
Paper Boxes, ½ pound	29 c.
Paper Boxes, ¼ pound	30 c.

Terms, 30 days, net, f.o.b. New York; Chicago delivery, ½ cent per pound advance.

The following extras are charged for smaller quantities:

5,000 to 10,000 pounds	½c.
1,000 to 5,000 pounds	1c.
500 to 1,000 pounds	1½ to 2½c.
Less than 500 pounds	3 to 3½c.

The majority of manufacturers are charging 2½ and 3½ cents advance, respectively, on the last two quantities.

Curry Combs.—It is generally agreed that prices on Curry Combs have shown a strengthening tendency during the past week or so. Quotations of some manufacturers are at least 5 per cent. higher, and they are said to be doing an excellent volume of business.

Seat Springs.—The manufacturers of Seat Springs adopted revised prices, which went into effect April 26. These prices for less than carload lots are as follows, terms, 60 days, or 2 per cent. discount for cash in 10 days:

Cents.	Cents.
1¼ x 2 x 24 39	1¼ x 3 x 28 59
1⅜ x 2 x 25 ..... 40½	1⅜ x 3 x 28 ..... 61½
1½ x 2 x 26 42	1½ x 3 x 28 64
1½ x 2 x 28 46	

Sash Cord.—The market for Sash Cord is unusually quiet and few large transactions are reported. Buyers are either well supplied or are withholding purchases for some other reason, and manufacturers' stocks are said to be accumulating, but prices are in general well maintained and the market seems to be in good condition.

Ice Skates.—Quotations which are about being made by manufacturers on Ice Skates indicate that there will be an advance of about 20 per cent. on low grade soft steel runner Skates. Manufacturers of these goods find that the increase in the cost of production is such as to make these advances necessary. The general policy of the Skate manufacturers, as far as can be judged from their actions in recent years, has been to hold the Skate market very steady and not to have it one of constant fluctuations. They have gone through the past two seasons with extraordinary provocations to increase their prices, but they have preferred to make less profit and in this way protect the interests of the jobbing and retail trade which may be carrying over its goods from year to year, and for whom a constantly varying scale of prices on seasonable goods is most undesirable. It is probable that merchants are carrying over rather large stocks this year, since the past winter was mild at the beginning and there was not much encouragement to buy Skates in December, which is the month when heaviest sales are generally made. While the manufacturers maintain that medium high grade Skates are costing more than they were when the present prices were established, they feel that they prefer to take profit on these goods rather than to shift prices for the reason already stated.

Billings & Spencer Company.—The Billings & Spencer Company, Hartford, Conn., announces a slight reduction in the discount on its Magazine Screw Drivers. This change in price is made because of the increased cost of material and the small margin of profit on the tools.

Ice Cream Freezers.—Reports from several manufacturers of Ice Cream Freezers indicate that they have been exceedingly busy turning out goods to fill their contract

orders, which were the largest that many of them ever booked. Unseasonable weather has undoubtedly caused the stocks of jobbers and retail merchants to move less rapidly than was expected, and duplicate and fill-up orders have not been forthcoming. With the coming warm weather it is believed that this business will develop in encouraging volume. Attention is called to the fact that although they had to pay some advance in raw material and labor costs manufacturers of Freezers did not advance their selling prices over those of the previous season. It would appear that not much thought has been given to next season's schedules, which, according to practice, do not come up for consideration until fall.

Wire Picture Cord.—For the past two or three weeks some irregularity has been observed in the market for Wire Picture Cord on which several manufacturers have been supposed to be working in harmony. Orders, however, have been rather urgently solicited and concessions on the established price have been made. Some makers state that they have made no cuts, but have found difficulty in booking orders at the prices they are maintaining.

Rope.—Manufacturers report a fair business, but refer to the season, regarding local demand, as being somewhat backward. Card prices remain unchanged, yet in the lower grades of Rope there are some variations. Quotations are as follows: Pure Manila, 13 to 13½ cents; B quality, 12 to 12½ cents; Pure Sisal, 9¼ cents; No. 2 quality, 7¾ to 8 cents; No. 1 Jute, ¼ in. and up, 9 cents; No. 2 Jute, 8½ cents.

Window Glass.—A meeting of the Eastern Window Glass Jobbers' Association was held last week, which resulted in prices being reaffirmed in certain territory of the Eastern District, while in other portions larger discounts were recommended, to meet existing conditions, and two cities became open markets. The market appears to be in a demoralized condition as the result of the cut in prices made by the machine blown glass manufacturers, about six weeks ago, which is understood to have been 90 and 20 to 90 and 25 per cent. discount from manufacturers' list,, and which caused the National Brokerage Company to close its factories, rather than to meet the cut. When this company named its prices last fall of 90 and 5 per cent. discount for single and 90 and 10 per cent. discount for double strength glass, from manufacturers' list, it was supposed that jobbers were to sell at about the same discounts from the jobbers' list, the difference between the lists being about 25 per cent. It is said that the Brokerage Company has been and is still holding to its original prices, but that the independent factories which are still in operation are meeting machine prices, if not cutting under them, and thus selling at a loss. The machine people have not publicly withdrawn their cut prices, but are probably filling few if any new orders. According to report, they did not agree to fill any of the orders that were placed with them at the cut price, but these prices remain a menace to the market. Under these conditions Eastern jobbers are doing a very limited business. Prices recommended by the Eastern Window Glass Jobbers' Association are as follows: Jobbers' quotations from jobbers' list October 1, 1903, Greater New York, 90 and 10 per cent. discount on all sizes, single and double strength. These prices are not very well maintained, as demand is light. In the Eastern District, outside Greater New York, there is lack of uniformity in the recommended quotations, these ranging from 90 and 5 for single and 90 and 10 per cent. discount in the extreme Southern States to 90 and 15 for single and 90 and 20 per cent. discount further north, with an open market in the cities of Baltimore and Washington. It is predicted by some in the trade that Glass will be scarce before the factories begin operations in the fall, as trouble in coming to a wage agreement with operators is looked for and a consequent late start is anticipated.

Linseed Oil.—Better weather conditions have improved demand for jobbing lots, and specifications on contracts have been more liberal, but requirements are not yet on a normal basis. New York quotations for jobbing lots are as follows, according to quality: City Raw, 44 to 45 cents per gallon; Out of Town Raw, 42 to 43 cents per gallon, according to seller. Boiled Oil is 1 cent a gallon over Raw.

Spirits Turpentine.—A decline has taken place in the price during the week of ½ cent per gallon, notwithstanding the shortage caused by the longshoremen's strike, which has tied up supplies in port for several days. The market is firm, New York quotations being as follows, according to quantity: Oil Barrels, 67 to 67½ cents; Machine Made Barrels, 67½ to 68 cents per gallon.

PROPOSED PAINT LEGISLATION.

At a meeting of representatives of the International Association of Master House Painters and Decorators of the United States and Canada, the Paint Manufacturers' Association of the United States, and the National Paint, Oil and Varnish Association, held in Philadelphia, May 9, legislation which is designed to regulate the sale of Paints, Oils and Turpentine was agreed upon. The purpose of the legislation is to afford the consumer adequate protection from misrepresentation and fraud, without bearing unjustly upon manufacturers and handlers of these products. It is proposed that such a bill shall be introduced into the legislatures of the several States, and into Congress when it is deemed expedient.

The bill provides that whoever shall expose for sale or sell any Paint, Turpentine or Linseed Oil which is labeled or marked in any manner as to tend to deceive the purchaser as to its nature or composition, or which is not accurately labeled, according to the laws that shall be enacted, shall be guilty of a misdemeanor, and for each offense shall, upon conviction, be punished by fine or imprisonment.

TRADE ITEMS.

THE MCKINNON ROCKAWAY AXE COMPANY, Rockaway, N. J., has been incorporated with a capital of $25,000. The incorporators are C. D. McKinnon, S. D. McKinnon and E. M. Loewenthal, the latter being secretary. The company will continue the manufacture of the McKinnon Rockaway hand made Axe, which was put on the market by the McKinnon family as long ago as 1845. We understand that heretofore notwithstanding the fact that more orders for the Axes were received than could be filled no attempt was made to increase the modest production. The new company will gradually install additional machinery and enlarge the output.

THE employees of the Turner & Seymour Mfg. Company, Torrington, Conn., gave a pleasant dance in the newly completed storehouse of that company on the 10th inst. The interior of the new building was decorated in red, white and blue, with bunting, streamers and flags. Each woman guest was presented with a carnation. During the dancing refreshments were served. About 300 persons were present, including the officers of the company and office force. The occasion was most enjoyable, and in view of its success will be repeated annually hereafter.

THE ODELL HARDWARE COMPANY, Greensboro, N. C., again desires to call the attention of the trade to the imposter who has been representing himself as in the company's employ. We understand that he has lately been operating in New York, Philadelphia, Baltimore and Cincinnati, and has met with considerable success in securing small "loans" on the basis of his pretended connection with the Odell Company.

As the trade is aware, the Chicago branch of E. C. Atkins & Co., Indianapolis, Ind., at 38 South Canal street, was recently destroyed by fire. The company now announces the opening of headquarters at 75 and 77 Market street, where it is comfortably installed and in excellent position to take care of orders.

THE National Wagon Manufacturers' Association of the United States has moved its headquarters to 417-419 Home Insurance Building, Chicago, Ill. E. W. McCullough is secretary of the association.

AMONG THE HARDWARE TRADE.

E. A. Steele, Parker, Kan., has been succeeded in the Hardware, Stove, Implement, Paint and Sporting Goods business by Steele Hardware Company.

Des Moines Saddlery Company, Des Moines, Iowa, a wholesale house, has increased its capital to $200,000.

E. F. De Lay, Cameron, Mo., has sold his Hardware store to G. C. Whistler.

Weaver & Coleman have succeeded to the Hardware business of W. W. Weaver, Norfolk, Neb.

Frank J. West has purchased the Hardware business of R. V. Churchill, Neola, Iowa.

C. A. Beachler, Gilead, Neb., has sold his Hardware, Stove, Sporting Goods, Paint and Harness business to L. H. Swasa.

The Hardware, Stove, Implement and Sporting Goods business of Clark Bros., Mutual, Okla., has been bought by T. Thomas.

J. W. McGregor has withdrawn from the McGregor-Farr Hardware Company, Burlingame, Kan., his interest having been purchased by F. W. Miner.

J. H. Price has opened a Hardware store at Florence, Neb., and will handle general Hardware, Stoves, Tinware and Paints.

Charles Kavanagh has succeeded Murphy & Kavanagh in Crab Orchard, Neb. A retail business will be conducted in Shelf and Heavy Hardware, Stoves and Tinware, also Furniture, which has been added.

L. W. Roellich, Sherwood, Ore., has added Vehicles and Agricultural Implements to his Harness and Saddlery business.

The W. A. L. Thompson Hardware Company, Topeka, Kan., is engaged upon plans for the expansion of its retail department to twice its present size. It is the purpose of the company to occupy the building adjoining its present quaraters on the south, 511 Kansas avenue, which will give a frontage of 50 ft. These rooms will be finished in white terra cotta, with a modern glass front, and the partition wall between the old and new rooms will be removed, throwing the entire space into one room.

Succeeding Petersen & Michelsen, the Petersen & Michelsen Hardware Company, South Omaha, Neb., has been incorporated with a capital stock of $25,000, and will continue the Stove and Hardware business. The officers of the new company are Theo. N. Petersen, president, and J. C. Michelsen, secretary and treasurer.

A one-third interest in the Hardware business of Empfield & Leonard, Anselmo, Neb., has been purchased by F. C. Wilson. The firm name has been changed to Empfield, Leonard & Co.

The Hardware and Implement business of Ed. H. Kelly & Co., Frankfort, Ind., has been purchased by Bert Wills.

The organization of the Perkins Hardware & Roofing Company, Youngstown, Ohio, has been perfected. The officers are as follows: President and general manager of the Hardware department, John R. Perkins; vice-president, George R. Perkins; secretary and treasurer and general manager of the roofing department, Joseph R. Perkins.

THE HUMPHRYES MFG. COMPANY.

THE HUMPHRYES MFG. COMPANY, Mansfield, Ohio, has selected the location of its New York office and warehouses to serve with maximum convenience both home and foreign trade. The management of the New York office is in charge of A. I. Laing, who has had a long experience in the manufacture and sale of plumbing goods. He chose a building at 636-638 West Thirty-fourth street, New York City, extending through to a railroad track running along a platform in the rear and facilitating the receipt of carload shipments from the factory. The building is near the piers for the shipment of goods to foreign countries. A visit to the warehouse at the present time shows a stock of perhaps 1000 Enamel Iron Bathtubs of various styles and sizes, and a stock of Enamel Iron Lavatories equally extensive.

In addition to the line of Sanitary Enamel Ware the company manufactures Plumbers' Brass Goods and Pumps. The Pumps are of extensive variety from the common Pitcher Pump to the Windmill and Force Pumps and Power Pumps, of both horizontal and vertical types. The Vertical Pump is of a construction which enables the entire piping to be lifted from the well without disconnecting the Pump from its foundations. The Horizontal Pumps are made with solid working parts in one piece as far as possible so as to avoid the shaking apart and loosening of the Pump. The high character of the company's product in Lavatories and Enamel Bathtubs is illustrated in the equipment of two hotels in Cairo, Egypt, and one in Hong Kong and shipments to Bangkok, Singapore, Argentine Republic, South Africa and Mexico.

WECK CUTLERY STORES.

EDWARD WECK has added another branch to his chain of Cutlery stores, the last one having just been opened at 387 Fulton street, Brooklyn, directly opposite the City Hall, where, as in his other stores, the finest brands of imported and domestic Cutlery are retailed. The main retail store is at 148 Fulton street, New York, near Broadway, another branch being located at 98 Nassau street, while still another store is at 120 Broadway. Edward Weck is also sole proprietor of the firm of Pauls Bros., manufacturers and importers of Cutlery and sole agents in the United States for Alb. and Aug. Pauls, Solingen, Germany. Pauls Bros. are sole manufacturers of Cutlery branded P. B. A. 1, sold as a popularly priced line, which includes Two-Blade Pen Knives to retail profitably at 25 cents each. Mr. Weck's wholesale business is carried on at 206 Broadway, he also having a factory at 61 Ann street.

AN attractive booklet has been issued by the Parry Mfg. Company, Indianapolis, Ind., maker of Parry Buggies, entitled, "Our New Plant." It is beautifully printed and handsomely illustrated with views of all departments. In addition to the views there is considerable descriptive matter, together with a short history of the business which was founded in 1886 in an old blacksmith shop in Rushville, Ind. Some idea of the extent of the present plant may be gathered from the fact that one building alone, the paint department for spring and road wagons, is nearly 900 ft. in length and 90 ft. wide.

THE SAMUEL C. TATUM COMPANY, Cincinnati, Ohio, has increased its capital by the addition of $100,000 6 per cent. preferred stock. The old capital was $125,000, all in common stock. The new capital will be used in the erection of a new plant at Coleraine avenue and Monmouth street, where a tract of land fronting 266 ft. on Coleraine avenue and extending through to Spring Grove avenue, has been secured. The plant will include a four-story brick factory building and a foundry, 108 x 308 ft.

S. W. CARD MFG. COMPANY, Mansfield, Mass., manufacturer of Taps, Dies and Screw Plates in great variety, is now located at the new address in New York, 132 Liberty street, where the facilities for expeditiously transacting business have been markedly improved.

Hardware Window Display

SIXTH ARTICLE.

Show Goods in Advance of Demand.

In arranging window displays of seasonable goods it is obviously desirable to show them somewhat in advance of the actual demand. By so doing it is possible to secure a considerable amount of trade by presenting the first suggestion of the approaching need. Another advantage is that of bringing before customers and possible customers the fact that your store is one in which the goods in question may be supplied when the need arises. Such window displays as these may be greatly aided by the use of newspaper advertisements appearing from time to time while the window is occupied by the goods referred to.

Fig. 15.—Dog Furnishings Displayed to Advantage.

A line on which much trade may be influenced and which will fully repay advance attention is that of lawn and garden necessities, which, of course, should be shown in the early spring. In connection with these goods Adjustable Window Screens in various sizes and styles, backed by Screen Wire in full rolls and accompanied by a notice to the effect that Screen Doors and Window Screens are made to order or recovered with Wire Cloth will undoubtedly stimulate trade. People who see the display are likely to begin thinking what their requirements will be, and naturally connect the store where the display was seen with the idea of supplying those needs. Lawn Hose or Hose Reels with Couplings and Nozzles attached, ready for use, with 50-ft. coils of Hose as taken from the original package, and boxes of Nozzles, Hose Menders, Sprayers, &c., are sufficient indication that a merchant's stock in this line is complete.

Spring Requirements.

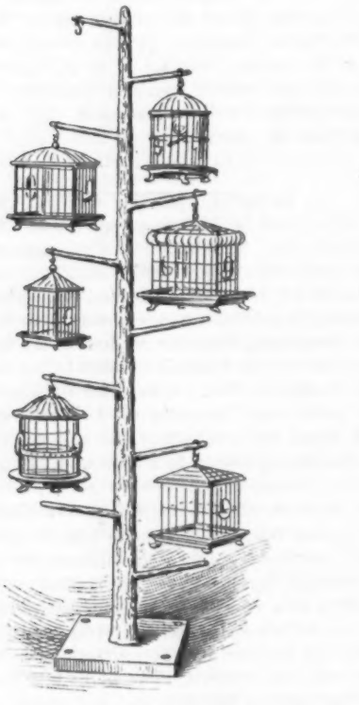


Fig. 16.—A Tree of Bird Cages.

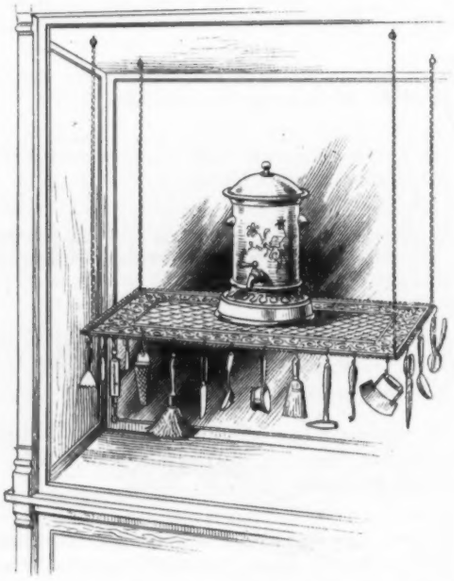


Fig. 17.—Metal Door Mat Used as a Hanging Shelf.

Fig. 15 suggests a satisfactory method of displaying Dog Furnishings. If a stuffed dog cannot be secured, a good sized terra cotta pug will answer the purpose.

Rack Made from Small Tree.

A sort of rack to hang goods on may be made from the trunk of a small tree or sapling, as suggested in Fig. 16, trimming off the branches so as to leave pegs at convenient intervals. The illustration shows some such rack used for the display of Bird Cages; it will also accommodate Kettles, Pails and many other articles. The post may be painted or wound with some colored material, or it may be left in natural form with the bark on, or after the manner of rustic furniture.

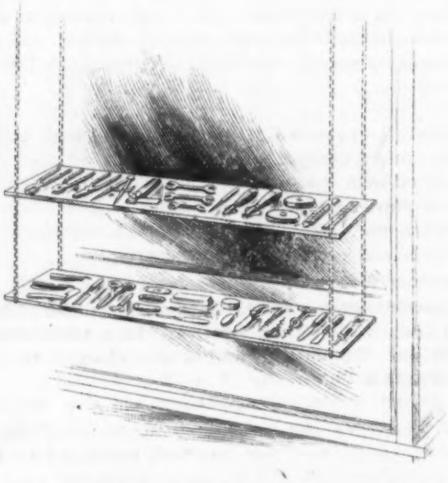


Fig. 18.—Hanging Glass Shelves for Small Articles.

Use of Hanging Shelves.

Fig. 17 suggests a somewhat extraordinary use for a Metal Door Mat, which is hung in a window by Sash

Suspended Door Mat.

Chain to serve as a place to set goods on. Small articles may be attached around the edge, if desired, by loops or hooks of Wire. The Water Cooler in the cut is rendered conspicuous by the fact that there are no other large goods on the Mat to distract the attention.

Glass Shelves.

Shelves of thick glass, as in Fig. 18, suspended in the window form a bright and transparent rest for small articles. The size of the shelves may be regulated by the space to be occupied or by the shape of the glass available for this purpose, which may be long and narrow, as in Fig. 18, or nearly square, as in Fig. 19. The latter cut also shows a stand with revolving glass shelves, which may

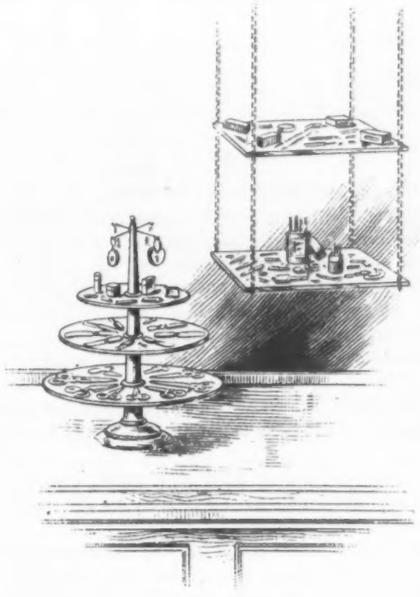


Fig. 19.—Odd Pieces of Glass Utilized for Shelves.

be made without much trouble, for displaying Pocket Cutlery, Scissors, Nail Clippers and other small articles.

(*To be continued.*)

CHAIN FALLS IN THE SHOW WINDOW.

BY F. B. M.

An attractive window display may be secured by placing an empty Hardware case or packing box in the rear of the window. Place a weight in the box or nail it to the window floor, so that it may not be upset. Take some bright Chain from stock, fastening the Chain at the back of the box in one corner by driving a Wire Nail through the first link. Then lead the loose Chain along the edge of the box until it strikes the floor, and then out across the floor of the window in a zigzag manner (like the winding of a stream of water) until the Chain about reaches the glass.

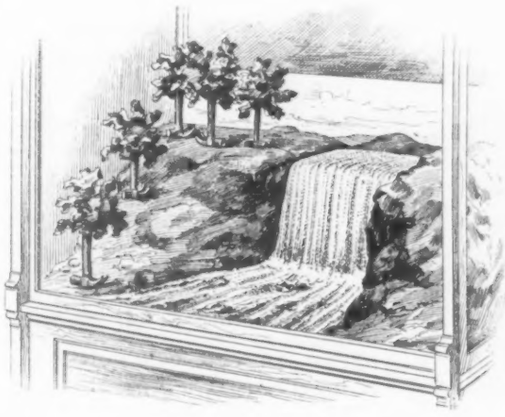
Then double the chain around, laying it close to the first strand and returning to the top of the box close to the starting point. Fasten here with another Wire Nail, and then continue the Chain to the window front once more, keeping this up until the desired width of Chain has been obtained, say 12 to 18 in.

After this has been accomplished, the part of the Chain laying loosely upon the flooring of the window may, if desired, be narrowed in some places here and there, by overlapping the Chain, thus presenting a more perfect imitation of a stream which every now and then either broadens out or runs through a narrow waterway in passing down a valley from the mountain side.

A very graceful appearance can be given to the falls after the chain has been properly draped over the box, by stuffing between the chain and the box a few pieces of mussed up papers, so as to give the falls a natural curvature, and the effect may be hightened by placing very thin, airy pieces of cotton in between a few of the links of the chain at the base of the falls. If this is carefully done it will give the appearance of foam and froth, as of water falling from a great hight.

Cover the floor of the window with green crêpe tissue paper, mussing up along the chain line to represent the shore line or river bank.

The background can be completed by placing other packing cases on each side of the "falls," covering the



Chain Falls in the Show Window.

fronts with brown or gray paper in imitation of rocks, which can be made to look real by mussing the paper here and bulging it there, and touching it up with a black marking brush. Above and on top place green paper and upon this stand at a slight angle a long board covered with light blue paper. This is for the sky line, and should extend all the way across.

Now on each side and leaning against this sky background place rows of Hammers with the handles sticking upward and the heads down. These Hammer handles will represent tree trunks, the foliage being furnished by taking one sheet of ordinary light green and one of dark green tissue paper and mussing up and tearing or clipping with the scissors to look like leaves.

Finish by tying these bunches of paper fast to the ends of the Hammer handles in such a way that the light green will always come on the upper left hand corner and the darker green upon the opposite lower side, which will give a truly beautiful and technically correct light and shadow effect of finish to the design as it appears from the front of the window.

YALE & TOWNE MFG. COMPANY AND E. T. FRAIM.

We are advised by the Yale & Towne Mfg. Company that while the article in our last issue relating to the litigation between that company and E. T. Fraim under the heading, "Judicial Decision on Unfair Competition," is in general correct, there is an inaccuracy in the reference to the Padlock as now made by E. T. Fraim. The statement to which exception is taken is that E. T. Fraim is manufacturing the same Padlock as was the subject of the litigation except that on the front panel there is the word Auto in place of Yap or Jap, "to which the Yale & Towne Mfg. Company makes no objection." The Yale & Towne Mfg. Company refers to this statement as not only inaccurate but contrary to the facts, and states that the Padlock as now made is not identical with the one on which the suit was based, but differs from it in several respects, and that the company is at present awaiting the opinion of its counsel as to whether or not it constitutes any encroachment on the rights to which the company is entitled under the decree of the United States Circuit Court of Appeals.

J. W. Johnson, formerly of Johnson, Coleman & Graham, Selma, Ala., has resigned his position with W. B. Fox & Bro. to become sales manager of the Lockwood Company, 79 Reade street, New York.

REQUESTS FOR CATALOGUES, &c.

The trade is given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.

REQUESTS for catalogues, price-lists, quotations, &c., have been received from the following houses, with whom manufacturers may desire to communicate:

FROM C. V. RYNO, who has succeeded Schoonover & Ryno, in Leslie, Ark. He will conduct both a wholesale and retail business in Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints, Oils, and Sporting Goods.

FROM JOHN A. EINFALT, who has engaged in the retail business in Gretna, Neb. The lines handled include Shelf and Heavy Hardware, Stoves, Tinware, Paints, Glass, Sporting Goods, Harness and Furniture.

FROM PALMER HARDWARE CO., D. B. Branaman, proprietor, succeeding Plank & Branaman, in Palmer, Neb. A retail business is done in Shelf and Heavy Hardware, Stoves, Tinware, Paints, Sporting Goods, Queensware, Phonographs and Supplies, &c.

FROM HANCE & BAKER, who have purchased the business of W. E. Younkin, in Galatia, Kan., and will handle Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints and Sporting Goods.

FROM HARRIS, FLIPPEN & CO., 1219 East Main street, Richmond, Va., who have added the sale of Shelf Hardware and Mechanics' Tools to their former Sporting Goods business.

FROM BLOCKTON HARDWARE COMPANY, Blockton, Iowa, which has purchased the Hardware, Stove, Paint, Sporting Goods and Furniture business of Hartley Brothers.

FROM THE GUARANTEE, Edward Kauffman, proprietor, which has succeeded to the Hardware business of Allen H. Waas & Co., Pueblo, Colo.

FROM EAST ORANGE HARDWARE COMPANY, East Orange, N. J., which has been incorporated by Valentine Braun, L. C. Helmer and E. H. Bedford, with a capital stock of $25,000, and will handle Shelf and Heavy Hardware, Stoves, Implements, Paints, Sporting Goods and Factory Supplies.

FROM PATTERSON, GOTTFRIED & HUNTER, 146-150 Center street, New York, who are revising their catalogue files and would like to receive two copies of the catalogues of leading manufacturers of Hardware, Tools, Supplies, Machinery and Metals.

FROM CRAVENS HARDWARE & FURNITURE COMPANY, Sugar City, Colo., which has succeeded to the business of Joseph Cravens.

FROM COLE & STAIGER, 32 Warren street and 102 Chambers street, New York, who carry on a business in Hardware, Tools and Supplies for mills, shops and factories.

FROM F. & J. MEYER, 116 Broad street, New York, exporters to the West Indies, especially Cuba and Porto Rico, of Hardware, Tools and related lines.

NOTICES of purchases have been issued by the Navy Department under date of April 27 and May 2, calling for material for which bids will be opened in Washington on specified dates late in May and early in June. The material called for includes a quantity of Brooms and Brushes, Miscellaneous Hardware, Tools, Hinges, Locks, Nails, Rivets, 6000 pairs of Scissors, Blocks, Sheaves and Pins, Bolts and Nuts, Emery Cloth, Files, Screws, Shovels, Hoes, Packing, Machine Tools, Paints and Oils and numerous kinds of metals.

Letters from the Trade.

Our readers are invited to discuss in these columns questions of trade interest connected with the manufacture or sale of Hardware. We shall be pleased to have a free expression of opinion on subjects deserving the attention of Hardware merchants and manufacturers.

Jobbers and the Cash Discount.

FROM A WESTERN MANUFACTURER: We are very much in earnest when we state that the article in your issue of May 7 signed "Middle States Manufacturer," should have the indorsement of all manufacturers.

The jobbers understand without schooling what cash discount means. Fighting for our rights, we are kept in hot water continually by some of the jobbers. Our goods are sold on terms 60 days net, 2 per cent. for cash in 10 days. Only the other day bills running from 20 to 45 days were remitted, deducting the 2 per cent. What's next?

FROM ANOTHER WESTERN MANUFACTURER.—We were much interested in the communication upon "Jobbers and Cash Discounts" in *The Iron Age* of May 9. We are manufacturers, and have noticed of late that our customers are observing discount terms much better. We were not aware that jobbers had made any promises to do better, and we were attributing the general improvement either to a general toning up of the sense of obligation on the part of the business community or the use of the rubber stamp which we saw recommended by a correspondent in your paper some months since, which reads as follows:

> *Sixty days net or 2 per cent. cash, 10 days, or 1-25 per cent. off for each day of prepayment after 10 days.*

This stamp has paid us its trifling expense many times over, as the obvious fairness of our proposition to allow proportionate discount cannot be denied by anybody.

Manufacturers' Magazine Advertising.

FROM A MICHIGAN HARDWARE MERCHANT:—I notice in your issue, May 2, that manufacturers are complaining of the indifference shown by Hardware dealers in regard to answering inquiries referred to them by the manufacturers, as a result of the latter's advertising in the popular magazines and periodicals.

I have had a number of such inquiries referred to me, and have usually written to the parties that I had the goods in stock, or would gladly supply the article, and that would be the end of it. I have never made a sale from such inquiries.

One Varnish firm referred an inquiry to me and I wrote the party that I would be glad to get the material wanted for him, and in a short time received a letter from the manufacturers that he had sold the party the Varnish direct, and complained that I did not put in a good stock of his Varnish to supply the trade.

One trouble, I think, is that some people want to leave the dealer out and prefer to buy direct when they can.

The manufacturer advertises the goods, and then expects every dealer to buy a good stock of him. There are so many good lines made we cannot carry a stock of all of them—it would require too much room and capital.

It is a good plan for a manufacturer to advertise his goods and bring them before the public, but if a dealer tried to answer all of the inquiries and circular letters that come in his mail he would have very little time for other duties.

L. S. STARRETT COMPANY, Athol, Mass., is now established in its new quarters at 132 Liberty street, New York, under the supervision of A. H. Briggs, manager, as heretofore. The new store is better suited to the company's needs, both as to stock carrying capacity and the packing and shipping of goods. It is intended to carry a larger stock now than was practicable heretofore.

Export Trade Topics.

PRACTICAL SUGGESTIONS ON EXPORT TRADE.

Fifth Article.—Marine Insurance.

THE novice in export shipping sometimes fails to understand the advantage, indeed, the necessity, of insuring goods that are to travel by sea. In the past it has not infrequently happened that manufacturers have allowed shipment after shipment to go forward unprotected by insurance, until finally awakened to the difference between rail and sea shipments by customers' repeated claims for damages, or an instance of that most astounding "general average," of whose very existence the inexperienced shipper has never dreamed. In its intricacies marine insurance is a very complex subject; far too complex to be explained here. It is based on the law of admiralty, which differs very materially and in a great many respects from common law or equity. A review of the elements of that law in some primary text book will prove of curious interest to any manufacturer engaged in export business.

"General Average."

He will learn in regard to marine insurance, for example, that when loss is incurred by a ship at sea, perhaps by jettison—*i. e.*, throwing overboard cargo on account of distress—the losses or expenses so incurred are assessed upon the owners of the cargo as well as the owners of the ship, in proportion to their several interests in the whole. This is known as "general average," and the owner of any goods shipped on board of such a ship is forced to pay any assessments that may be levied. In the absence of insurance he has no redress whatever. On this account, then, as well as to protect himself against the numerous chances of loss or damage in ocean shipments, export shipments ought not to be permitted to leave port until adequately covered by insurance.

Two Varieties of Insurance.

Broadly speaking, two forms of marine insurance may be recognized, commonly known as "w. a." and "f. p. a." The latter is the more usual and the cheaper and, in the absence of specific instructions to the contrary, is that usually covered by insurance companies or forwarding agents. "F. p. a." signifies "free of particular average." In a very general way, "particular average" means partial damage. The reading of such a policy usually is, "Free of average under 3 per cent. (or perhaps 5 per cent.), unless the vessel be stranded, sunk, burned or in collision." In other words, the underwriters do not hold themselves responsible for any damage to the merchandise, as from sea water, for instance, unless amounting to more than 3 per cent. of the value, unless the ship has experienced one of the disasters named. This form of insurance is usually considered sufficient for all ordinary shipments.

In some cases, however, it is very desirable to pay a slightly higher premium and enjoy the benefit of insurance "w. a."—with average. This insurance may be and usually is accompanied by further provisions protecting against certain specified forms of loss. For example, one may insure against theft of goods en route, usually paying about one-eighth of 1 per cent. extra therefor. This is very desirable in the case of shipments of small articles of a certain value easily abstracted from packages, and especially when shipped to Oriental markets. One may similarly protect himself against leakage of fluids and against breakage of machinery, all of which are losses not covered by the ordinary form of policy unless specifically contracted for and paid for by increased rates of premium.

But every precaution must still be exercised by the shipper, no matter if he be protected by such special insurance. The insurance company will not pay losses in case of breakage, for example, if the steamship company has issued its bill of lading stamped with the ominous legend, "insufficiently protected." And the manufacturer who ships machinery in crates or in very light cases is quite sure to encounter this effort on the part of the carrier to protect himself against any possible claims against him.

Nor will insurance companies tolerate impositions. A continuous series of petty claims, or claims of doubtful propriety, or those that apparently ought to have been foreseen and provided against, will usually result in a disinclination of the underwriters to issue more insurance of a similar character. It should further be noted here that it may be arranged, if desired, for the policy to cover the risk from the moment of shipment from inland factory through into the foreign consignee's own warehouse.

Selection of an Insurance Company.

One marine insurance company is usually as good as another; ordinarily there is little choice among them. However, it is always desirable when possible to insure with a company having an office or agent at the port to which goods are destined, or at least near to that port, and such addresses should be shown on the certificate of insurance. This greatly facilitates collection of losses in case of damage. Shippers doing a considerable or a constant export business usually arrange with some one insurance company to cover all of their shipments under certain agreed provisions and at specified premiums. In this case what is called an "open policy" is issued, under which it is only necessary when making a shipment to notify the company or its agent in writing that a certificate in duplicate is wanted covering ——— packages (kind described) containing —— goods, valued at $——, marked ———, shipped per steamship ———, sailing date —— from ——— for ———. Such certificates are usually written in the name of the shippers, and when indorsed by them in blank the loss, if any, becomes payable to the holder. The duplicate certificates may both be sent forward with the duplicate bills of lading, or one may be retained in the shipper's office.

Insurance should always be covered for a value of from 10 to 20 per cent. more than the actual invoice price of the goods. That this will be done is a well established and legally defensible principle. The theory is that with ocean freights, which must be paid in any event, and for other obvious reasons, the merchandise on arrival at destination will actually be worth to the importer at least so much more than first cost.

How Claims Are Collected.

Collection of losses under an insurance policy may be made either by the shipper or by the consignee of the goods. The shipper usually takes the position that it is the business of the consignee to attend to this matter, but sometimes assumes it himself as a courtesy to the customer. It is often an annoying and long drawn out operation, particularly in New York, and it will invariably be found far easier and more expeditious for the consignee to make his claim on the spot, and especially if there exists an agent there for the company which has issued the insurance. When clients refer the claim back to the manufacturer for collection the original certificate of insurance should be returned, and along with it an official certificate of inspection by Lloyd's representative on the spot, specifying the conditions and appraising the damages. Lloyd's agents exist in every port of the world and grant such certificates, when justified, in return for certain fees, which fees and other legitimate expenses involved are made an additional claim on the insurance company, over and above the amount of the damages claimed.

(To be continued.)

GEORGE H. BUNTING, president of the Bunting-Stone Hardware Company of Kansas City, Mo., has purchased the five-story warehouse and lot formerly occupied by the Stearns Paint Mfg. Company, at the southwest corner of Twentieth street and Baltimore avenue, Kansas City, for $60,000. The property was purchased from the Pioneer Trust Company. Mr. Bunting will lease the building to the Bunting-Stone Hardware Company, who will use it for additional wholesale warehouse purposes.

SOME ASPECTS OF THE REFRIGERATOR MARKET.

THE past winter and spring have been seasons of great activity with manufacturers of Refrigerators, most of whom are turning out the largest year's production in their history. Many have been obliged to refuse desirable business offered them, while others are still running some weeks behind in their deliveries. We have received a number of letters from manufacturers in different sections of the country, whose timely expression of their views will doubtless be of no little interest to our readers.

Some Difference of Opinion

is apparent as to conditions and prospects, although, as already stated, it would seem that most producers have had as much business as they could efficiently handle. Some, however, state that the backward season has begun to have its effect in reducing reorders, but it may well be believed that this fact is not complained of by those who have been unable to catch up with business booked. Reference is also made to stocks carried over by the trade, last summer not having been very warm in some localities. One manufacturer writes:

We are doing a very good business considering the backward spring. This cold weather has a depressing effect upon all seasonable articles, and Refrigerators seem to be getting their share of the depression. This, together with the high prices of materials at the present time, is liable to have an undesirable effect on next season's business.

In the same vein another manufacturer says:

It will depend largely upon the weather in May, in our opinion, how the Refrigerator duplicate orders come in, but we understand that the price of ice is very much reduced from last year and the stock is plenty, so that if we have seasonable weather it ought to stimulate the Refrigerator trade, as the condition of the country seems to be prosperous. We believe, however, that in the last two or three years, owing to the generally cold seasons, there has been a tendency to accumulate stocks, which have been carried more or less from season to season by jobbers, retailers and manufacturers. Of course it will take favorable conditions for a few weeks to clean out this surplus stock.

The Price of Ice,

mentioned in the last letter, is referred to by several manufacturers, the scarcity and high prices of last season being noticeably felt; but improvement in this respect is practically certain for the present year, as a great deal of ice has been harvested, and it is believed that ice dealers will show less disposition to charge exorbitant prices.

Hardwaremen Sell Better Grades.

A noteworthy fact is that while a few manufacturers report an increased demand on the part of installment houses and department stores for the cheaper grades of Refrigerators, it is generally agreed that the sale of first-class goods has broadened considerably, and that the Hardwareman seems to be able to dispose of better grades than any other class of merchants who handle this line. One manufacturer says:

Specifications have been somewhat in excess of last season. This, however, is in number rather than in value. There seems to be an increasing demand for the cheap goods. This demand seemingly comes from the installment houses and department stores, rather than from the Hardware jobbing trade. The Hardware merchants seem to be able to dispose of a higher grade of Refrigerator than is sold by the other class of merchants. Will say further that the cheaper goods are called for in the larger cities. We think the Refrigerator manufacturers generally seek to fight off the purchaser of the cheap Refrigerator, but in the end ease up for fear of competitors. If next month should prove to be a good warm one we think the demand for Refrigerators will exceed the supply.

Built-in Refrigerators.

An interesting statement is made by a producer in the West that there is a largely increased demand for built-in Refrigerators, which he states are being put into most modern dwelling houses as well as into a good many flats. To use his own words:

The demand for high class Refrigerators is much larger than ever before, especially those to be used in new and modern homes, made to ice from the outside of the house. We are enjoying a fine trade in this class of goods, also portable Refrigerators, tile lined, built with extra heavy walls. Nearly all of the flat builders in our city are placing Refrigerators in them. In time this is going to curtail the sale of small Refrigerators to quite an extent, as people that are moving around will not have to own one any more than they would a gas stove.

In spite of the weather conditions already referred to the preponderant opinion seems to be that the season's business will on the whole be entirely satisfactory, and the one note of complaint relates to prices secured, which are said to be low and not sufficiently remunerative in view of present manufacturing costs.

Raw Material,

which has steadily moved upward for a considerable period of time, has sustained some further advances during the past year, and several manufacturers state that on this account it will be necessary for them to get better prices on their next season's output. The following extracts from letters received refer to this aspect of the market:

From a Manufacturer in Michigan: So far as our trade is concerned, we are having a fine business this spring. The demand has come exceptionally early, owing to the unseasonably warm weather in March, which stirred up the trade. It has had a tendency to apparently crowd nine months' business into six months, which of itself is always apt to have a tendency of making an apparent extraordinarily urgent demand. We think on the whole there will be enough Refrigerators to go around when all conditions are evened up. There has been no advance this spring in the price, but materials and labor entering into Refrigerators have advanced constantly since last fall, and it looks like the goods were now being sold at a comparatively low price. Retailers should reap the benefit of this by holding for an advance, which is warranted by present conditions of demand and manufacturing costs.

Goods Now Low.

From a Manufacturer in the West: We find ourselves short this season over 8000 boxes and the demand for 1908 apparently seems stronger than ever, as we have parties in line now who are very anxious to close up business for 1908. In fact, we find many of the smaller dealers, who heretofore have been able to place their orders at any time and almost always secure prompt delivery, are now willing to place their orders for 1908, and the Refrigerator business has apparently taken a different stand during the past three years. So much for the general conditions which we expect for 1908. In regard to prices, we know nothing of what the other Refrigerator people contemplate doing, and it does not make much difference, as we guide ourselves by our own costs, and we are now working on new lists, advancing our prices on an average of about 15 per cent. Lumber, iron and trimmings, and in fact all raw materials which enter into the construction of Refrigerators, have advanced from 10 to 15 per cent. We observe by one of the lumber journals in this State that they have shoved up the price of lumber $2 again per thousand. The worst item, however, to contend with is the labor proposition. If it were not for the labor proposition 10 per cent. advance in our line would be sufficient to cover recent advances. This is saying nothing, however, of advances which are still liable to occur. The labor item, however, is a serious proposition, and there is no end to what we may be compelled to do. Of course the different localities have different effects, but in our territory we have been obliged to advance labor 25 per cent., and then we have hard work in securing same.

An Independent Advance.

The Labor Problem.

From a Manufacturer in the East: There has so far been a brisk demand for Refrigerators, and we believe that with the advent of warm weather it will increase still more. We, like other manufacturers, have been obliged to decline orders from late comers whose trade otherwise would be desirable, and it would not surprise us to find Refrigerators at a premium in the near future, more especially as we are all experiencing difficulty in getting even old orders for material and supplies filled, no one seeming to have liberal stocks from which to ship promptly, and the railroads delaying shipments when finally made.

While the volume of trade is satisfactory and consumers generally calling for larger and better grades, such as opalite glass and porcelain or tile lined, many of the orders being for special sizes "to order," Refrigerator manufacturers (in keeping with their usual short sightedness) failed to demand a sufficiently large advance to cover the increased cost of production, having evi-

Tendency Upward.

dently assumed that top notch had been reached in the matter of prices of material, supplies and labor. The tendency has continued upward, and it is safe to say that Refrigerators shipped since the first of the year cannot be replaced at anything like the cost that prevailed in the early winter, and at a profit, and most of us would be glad to cancel unfilled orders if it could be done with good grace. The manufacturers can legitimately demand a further advance, more especially from tardy buyers or those who cannot get orders for their regular lines filled promptly and make a temporary convenience of other manufacturers. Prices of zinc, lumber and other supplies (to say nothing of scarcity and high price of competent labor) continue to appreciate, and advances are sprung on us suddenly, and unless conditions change the cost of production will be greater as time goes on. We have already had to contract for a portion of our ash to put into 1908 goods at a straight advance of $5 per thousand, while soft wood has gone up recently $5 to $8, according to grade. Notwithstanding the generally prosperous times, and the fact that consumers are buying more, larger and better goods than ever before, the petty advances made by Refrigerator manufacturers have not been proportionate to the heavy increased cost, and they have not realized a legitimate margin of profit; indeed, it is questionable whether many of them have done as well financially as during the late "depression times." In short, they have not taken advantage of the opportunity to command a *legitimate profit* on their product, as manufacturers in most other line have done. Possibly most of them have now had sufficient "experience" and will before the opening of another season rise equal to the occasion.

Advances Insufficient.

PRICE-LISTS, CIRCULARS, Etc.

Manufacturers in Hardware and related lines are requested to send us copies of catalogues, price-lists, &c., for our Catalogue Department in New York; and at the same time to call attention to any new goods or additions to their lines, of which appropriate mention will be made, desides the brief reference to the catalogue or price-list in this column.

THE UNION CUTLERY & HARDWARE COMPANY, Unionville, Conn.: Illustrated catalogue of Tin Plated Cutlery, including a variety of styles of Knives and Forks. In addition to the line of Tin and Nickel Plate Cutlery, the company manufactures High Grade Knife and Fork Blanks for the manufacturing and plating trade.

HARDWARE SUPPLY COMPANY, 89 Campau street, Grand Rapids, Mich.: Catalogue No. 6, devoted to Cabinet Hardware Specialties, including Door Catches, Spring Latches, Spring and Flush Bolts, Furniture Knobs, Desk Lid Supports, Shelf Supports, Drawer Pulls, &c. All lists have been changed and are now governed by the same discount.

THE BRAINERD MFG. COMPANY, Dispatch, N. Y.: Catalogue devoted to Brass, Bronze and Steel Cabinet Hardware, Adjustable Window Shade Brackets, Razor Strop Holders, Cleats, Window Rods, Window Ventilators, Card Frames, and Pulls, Stair Corners, &c.

THE OHIO STRUCTURAL IRON COMPANY, Sandusky, Ohio: Catalogues and folders illustrating its large and varied line of products, including Architectural, Ornamental and Light Structural Iron Work. The printed matter includes Fence Catalogue Z, Lawn Seat Folder B, Fire Escape Folder A, General Catalogue D and Jail Catalogue B.

W. S. FRAZIER & Co., Aurora, Ill.: Catalogue relating to high grade Vehicles, including Carts, Road Wagons, Runabouts, Speed Wagons, Buggies, Sulkies, &c.

ADAMS & ELTING COMPANY, 155 Washington boulevard, Chicago, Ill. Catalogue and price-list of Wood Finishers' Supplies, Brushes, Paints and Paint Specialties.

THE AUTOLIGHT & MOTOR SUPPLY COMPANY, 506-508 North Broad street, Philadelphia, Pa.: Catalogue relating to Automobile Lights and Supplies.

CALCULAGRAPH COMPANY, 9-13 Maiden lane, New York: Illustrated printed matter descriptive of Calculagraphs, designed to meet the needs of different industries. These include models for use in manufacturing plants for learning the labor cost of products, as well as for furnishing data for payrolls, for establishing piece prices and for other purposes.

AUSTRALIAN NOTES.

MELBOURNE, April 15, 1907.

BUSINESS in the Hardware trade continues to hold good, though without any noticeable developments in any special lines. Rabbit proof Wire Netting continues to meet a most steady demand, and the annual consumption must run into the thousands in mileage. Rabbit Traps are also a line which moves very quickly and never becomes dead stock. They are British made almost in entirety. Fencing Wire, in which the Germans have a big hold, is a prominent Australian line largely neglected by the United States, except in some barbed lines.

The building trade continues brisk in all the States of the Commonwealth, and brings a host of requirements in its train. Cement is divided between English, German and local makers, and is selling at 11s. to 11s. 6d. a barrel. Builders' ironmongery and brass foundry are in steady demand, and the goods of Russell & Erwin Mfg. Company and Sargent & Co. seem in fair request.

EXHIBITIONS.—The New Zealand Exhibition, held at Christchurch, is announced to close to-day, after running for about six months. Another exhibition is proposed, to be held at Sydney some time during 1908. At present the scheme is in embryo, but there seems every likelihood of its coming to maturity.

THE COMMERCIAL OUTLOOK.—A wise man prophesies after the event. Leaving your exporters to draw their own conclusions, this letter merely chronicles the fact that, in addition to the building of the huge pile for Anthony Hordern, the Universal Provider, in Sydney, many other large Australian firms are extending their premises. Progress seems general all round, and if the seasons continue good and the great Australian nightmare—the drought—will consent to lie hidden, development will proceed apace.

VICTORIAN HARDWARE ASSISTANTS' ASSOCIATION.—This association held its twelfth annual picnic recently, and the members, with their families, chartered a steamer to take the party, 1500 strong, to Sorrento, a holiday resort near Port Philip Heads. The association is growing rapidly, and will shortly move to new premises now being erected in Little Collins street, the center of the Melbourne Hardware trade. The sphere of usefulness of the association is being considerably widened by the establishment of a relief fund. The employees have joined heartily in the scheme, and over £400 was subscribed by 20 of them to give the endowment fund a start. Donations from the employers will be invested, and the interest from the investment paid into a contingent fund to which the employees will be asked to make regular contributions.

GEORGE KINNAIRD ELLIOTT died on April 28 at his home in Columbus, Ohio, after a short illness, from spinal meningitis. Mr. Elliott was for many years associated with the firm of Abbott, Montgomery & Stoner in the Hardware business, and at the time of his death was the senior member of the Elliott-Harris Hardware Company. He was born at Alton, August 28, 1855, and had been a resident of Columbus since 1870. Mr. Elliott was interested in the Hardesty-Williams Milling Company and was a member of the Board of Directors of the Columbus Driving Park Association.

THE SALT LAKE HARDWARE COMPANY, Salt Lake City, Utah, has increased its capital stock to $1,500,000. The company conducts a wholesale and retail business in Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints, Sporting Goods, Mining and Mill Machinery, Assay Supplies, Saddlery and Harness.

THE AUTOLIGHT & MOTOR SUPPLY COMPANY, Philadelphia, Pa., having found that increasing business makes larger quarters imperative, has leased the two buildings at 506-508 North Broad street, which it will occupy entire after May 15.

Foreign Trade Development.

BY VIATOR.

OF late the Consular service has been brought under Civil Service regulations, requiring examinations in languages; knowledge of industrial, natural and commercial resources; political economy; commercial, maritime and international law; American history, institutions and government; commercial and political geography; modern history, &c. This is a step in the right direction, but as this so-called "executive order" is of recent date no appointments have been made under its regulations.

The average American Consul, as he is to-day, has been appointed by reason of his "pull," irrespective of capacity. He is supposed to represent Uncle Sam. He manages to have a good time, makes his red tape report couched in official language to the Department of State, dines and wines and draws his salary.

An Austrian Consul's Bureau of Information.

To these, one Consul, stationed in an Austrian city, is an exception. He has established at his own expense a bureau of information, which should be adopted by our Government in every Consular station in the world and at the expense of the Government.

In this information bureau may be found on file many American trade papers; also a classified list of reputable American manufacturers, card indexed as to their product of, say, Locks, Saws, Chisels, Phonographs, Watches, &c., with catalogues, circulars, prices, terms and other necessary information. Now, if some Austrian merchant desires to place an order for, say, Saws, he can get the name and address of the desired Saw manufacturer, and often prices, terms, &c., from the bureau files. The Austrian dealer is thus enabled to put himself in correspondence with the Saw manufacturer and much time is saved. If a rule was made that only reputable and responsible concerns should be listed, and if it were so understood by the foreigners, it would inspire confidence.

This wideawake Consul learns through the press and other sources that a large order for, say, steel rails, is to be placed. He notifies the American manufacturer in interest by postal card about as follows:

> I have the honor to inform you that.....
> of.....are about to place an order
> for.....tons of Steel Rails, and desire to
> be favored with your prices, terms, &c.
> Respectfully, &c.,

It will be seen that such a system, even in its crude state, leads to correspondence and eventually orders. It brings Americans in touch with brethren in other lands, their needs, and in the course of time their orders are secured.

This Consul has appealed to the Government for funds to further develop his system, but has been informed by the State Department that no funds were available for such purposes.

It is conceded that sooner or later such an outlet will be needed for American surplus manufactures, so is it not prudent to look forward and lay plans to conquer foreign fields? It is well known that foreign trade is the salvation of England, Germany, France, Belgium and other countries.

Manufacturers' Association for Promoting Foreign Trade.

Our Government spends millions of dollars annually in agricultural experimental stations, gives carloads of seeds to the farmers, stocks fish streams and lakes with fish, and why should it not help the manufacturer and through him the mechanic? Why not form an American manufacturers' association for the promotion of foreign trade, to which any reputable American manufacturer in any line of business shall be eligible, supported by a membership fee?

It should be the function of that association to take steps to have Congress appropriate a fund for the purpose indicated for all our Consular stations. The association could then work out a comprehensive system of card indexing and a general scheme of information which would fit all lines of manufacture which can be profitably exported.

It would be a long step toward getting acquainted with the hundreds of millions of humanity beyond the seas, which would not only be profitable to us, but we could gradually teach them the comforts and conveniences of life with which we are blessed beyond measure.

The writer of this article is prepared to undertake the work of organization and the drafting of a bill to be introduced in the next Congress.

As the members of the proposed association would be scattered all over the land and necessarily of influence, they could request their various representatives in Congress to enact such a measure and thus the machinery might be put in motion within a year.

E. C. ATKINS & CO.'S TRADEMARKS.

FOR many years E. C. Atkins & Co., Indianapolis, Ind., have been using the trademarks reproduced herewith, and as a result of the company's enterprise in making its identity known in connection with its product the trademarks are very familiar to the trade. The triple A stands for "Atkins Always Ahead," which is intended as a reminder that the company is ever alert and aggressive in its business conduct and in maintaining the quality of its output. The three A trademark is extensively employed by the company in its newspaper advertising and trade literature in the way of catalogues, circulars, &c., and it also appears on many different types of Saws. The Silver Steel trademark, as implied in the name, has reference to a steel used in the company's Saw blades, the quality of which is thus emphasized.

In this connection we also illustrate the company's handsome gold seal, which has been adopted in commemoration of its fiftieth anniversary, which occurs this year. This gold seal, it will be observed, also contains the triple A. Throughout 1907 it will be affixed to all outgoing correspondence, not only from the main office at Indianapolis, but from the branches in different parts of the country as well.

MISCELLANEOUS NOTES.

William Shakespeare, Jr., Company.

William Shakespeare, Jr., Company, Kalamazoo, Mich., has made a number of additions to its line of fine fishing tackle during the past year. The new goods include different styles and qualities of rods, baits, lines and reels. These, with former goods, are shown in the company's 1907 catalogue, recently issued.

Garden and Concrete Barrows.

The barrow shown in Fig. 1 of the accompanying cuts is intended for service in caring for lawns and gardens. It is furnished with two wheels upon which a light sheet steel tray, with wooden bottom, is mounted. By raising the handles the mouth of the tray is depressed so that grass and leaves may be conveniently raked into it. The

concrete barrow, Fig. 2, is of suitable design for heavy service demanded in cement and concrete work. It has a strong, roomy steel tray, built high in front to preserve

Fig. 1.—Handy Garden Barrow.

an even level of the load, and has a capacity of 4 cu. ft. The frame is joined together in front of the wheel by a steel yoke, a projection of which serves as a nose upon which to pivot the barrow when tipping the load. The

Fig. 2.—Concrete Barrow.

wheel is of malleable iron and its axle passes through eyes provided in the frame yoke. The shipping weight of this barrow is 860 lb. per dozen. Puffer-Hubbard Mfg. Company, Minneapolis, Minn., is manufacturing these barrows.

The Worthington Roller Screen.

The Worthington Roller Screen Company, Hagerstown, Md., is offering the roller screen shown in the accompanying cuts. The screen is not made of wire, but

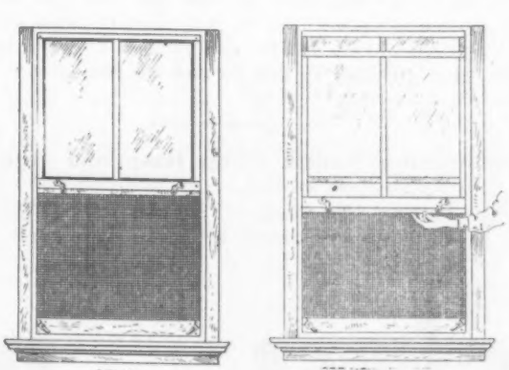


Fig. 1. Fig. 2.

The Worthington Roller Screen.

of a strong tissue, which is represented as being three times as durable as wire, as not rusting, and is guaranteed to be waterproof in any climate and to retain its color and freshness. In Fig. 1 the lower sash is shown open, drawing the screen up with it, while Fig. 2 shows the manner in which it is done. Among some of the advantages of this form of screen are the following: That it can be put in any window by a child as quickly as the sash can be raised, and can be taken out and set aside as quickly, and that the sash can be raised to any hight desired, according to the weather. Regular sized screens are carried in stock by the company, and it will also make special sizes at a slight additional cost. Screens can be furnished in any color desired, the wooden part to match furniture or room.

Nonclimbable Fence Post.

J. H. Downs, 299 Broadway, New York, manufacturer of the angle steel fence post illustrated some months ago in these columns, has devised and is now offering a post of similar construction, with the object of making the fence unclimbable. As will be seen from Fig. 1, the difficulties attendant upon climbing a fence constructed in this way would be sufficient to deter almost any one from trying it. Other advantages of this fence are its neat

Fig. 1.—Nonclimbable Fence Post in Use.

Fig. 2.—Base of Fence Post Showing Concrete Collar and Buried Section.

appearance, great durability and its noncombustibility. Posts are punched to order to accommodate any make of woven wire fence and special end and corner posts with angle steel braces are furnished according to specifications. The posts are made of high carbon steel angle, and are thoroughly painted with waterproof paint which it is said will keep them from rusting for many years. They are to be driven into the ground, thus saving the labor and expense of digging post holes. Each post sets in a collar, as shown in Fig. 2, which is made of vitrified clay, burned hard, and is intended to reinforce the post in the ground. The collars are a loose fit and are slid down on the post after driving, leaving about 1 in. of collar above ground. After being properly tamped, it is declared that the post will remain absolutely rigid.

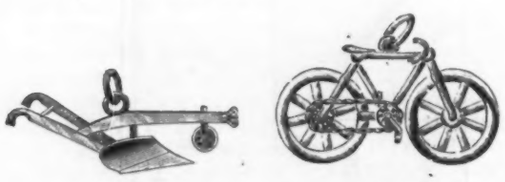
Miniature Trade Emblems.

The accompanying illustrations represent trade emblems, full size, which are selections from the line made by J. M. Fisher & Co., Attleboro, Mass., manufacturing jewelers. The emblems are rolled gold plate or gold filled, the same process being used in gold plating them

that is used in the watch case industry. The articles are exceedingly neat and attractive in appearance, and are designed to be used as watch chain charms or on fobs. The revolver is made in rolled plate, with both pearl and hard rubber handles. The cylinder of the revolver turns. The blades of the saws are of silveroid, which is similar to white metal, and are solid all through, not plated. The lantern is all rolled plate, with a bail that swings. The lanterns are furnished with red, white and green globes.

No. 5358. No. 5305.

No. 3348. No. 5486. No. 1062.



No. 1174. No. 1526.

Miniature Trade Emblems (Full Size).

Baseballs are made in several sizes, and are mounted with just the eye at the top, and with rolled plate balls. The plow and bicycle are both of gold finish, and the crank in the bicycle revolves. The idea has been to make the emblems as near to working models as possible. Hardware merchants could probably find a market for these goods with mechanics and others, as included in stock designs are the following emblems in addition to those shown: Butcher's steel, file, trowel, screw wrench, razor, machinist's hammer, screw driver, carpenter's hammer, hatchet, cleaver, micrometer gauge, chisel, curry comb, try square, hack saw, putty knife, &c. These are mounted singly or 12 on a card, as desired. Manufacturers might use the emblems as advertising souvenirs, and could have their names put on most any article desired. Something suitable can be gotten up for any line of hardware or related goods.

The Crown Roaster.

The Enterprise Enamel Company, Bellaire, Ohio, is manufacturing the Crown roaster, here illustrated. Fig.

Fig. 1.—Crown Roaster.

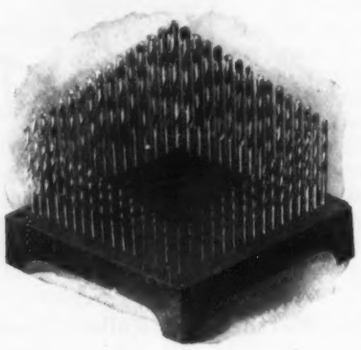
1 shows the complete roaster and Fig. 2 is a broken away view showing the method of construction. The roaster is oval in shape, 18 x 11 in. in size and 7½ in. deep. The color of the enamel is described as a rich, glossy black, slightly flecked with white. By the ingenious method of construction shown in Fig. 2 it is contrived that the bottom cannot touch the oven, so that meat may be cooked until tender without burning. The cover keeps every whiff of grease and moisture inside. Being made of one piece of steel, the roaster is absolutely seamless

Fig. 2.—Sectional View of Roaster, Showing Method of Construction in One Piece.

and thus affords no place for grease or other particles to accumulate. Every part, inside and out, may be cleaned as easily as a china plate. The enamel is said to be indestructible and not affected by any acid. The handles are strong and the roaster has no complicated parts. The roaster is furnished in plain steel if desired.

W. & B. Metal Drill Block.

The Whitman & Barnes Mfg. Company, Chicago, Ill., is offering a new metal drill block, shown herewith, equipped with sets of drills in two sizes. Number 5-A block is fitted with jobbers' drills, from 1-16 to ½ in. by 64ths, and No. 8-A set contains wire drills, Nos. 1 to 60, inclusive. The blocks are cast and are given a copperized finish. The numbers and lettering are raised and are clear and plain. Each drill fits into a hole in the block



W. & B. Metal Drill Block.

of a corresponding size. On the No. 5-A block, with jobbers' drills, the 32d sizes are one side and the 64th sizes on the other. On the No. 8-A block the even numbers are on one side and the odd numbers on the other, both being arranged in this manner for convenience in selecting drills from the stand.

Combination Handle Hinge Hasp and Hook.

The National Mfg. Company, Sterling, Ill., is offering the handle hinge hasp shown herewith. It is made of

Combination Handle Hinge Hasp and Hook.

steel, japanned, and is furnished in three sizes. The convenience of such a combination is emphasized by the manufacturer.

Improved Studebaker Ideal Dump Wagon.

Studebaker Bros. Mfg. Company, South Bend, Ind., is offering the improved form of dump wagon shown in the accompanying cuts. The wheels are built to stand up under the hardest kind of wear. The front gear has full circle oscillating fifth wheel, permitting the front wheel on either side to drop into a depression or to run over an obstruction without disturbing the level of the body. The load is drawn directly from the front axle instead of from the hounds, which is alluded to as an improvement. The rear axle is arched, thereby permitting shorter coupling, consequently lighter draft, and also insuring clearance, making it impossible to stall a team on the dump. The dumping attachment is operated from the driver's seat. It is referred to as simple and positive in its action. A chain is attached to the front roller and passes down over rollers to one of the trap doors, the rear end of the bed, along the full length of the other door and back again to the front roller, making practically an endless chain. One end of the chain winds upon a slightly larger roller circumference than the other, closing one door in advance of the other. The bottom doors are covered with a high quality of heavy sheet steel. Over the inside edge of the trap door closing first this steel projects about 1½ in., so that when the doors are closed the projection laps over the other door, effectually closing the opening to make a tight bed that will not leak. It is pointed out that by the use of the endless chain device for closing the trap doors all necessity for adjustment is avoided and the doors are always tightly closed. Attached to the dumping lever is a safety device, to make it impossible to accidently dump the load. The trap door sills are made of heavy angle iron and underneath them passes the endless chain. Metal loops serve to retain the chain in place. The trap doors are suspended by four heavy hinges on each side. The body of the wagon is made of well seasoned bone dry hard wood. The wagon is made in two sizes—1½ and 2 yard capacities, respectively, stroke measure.

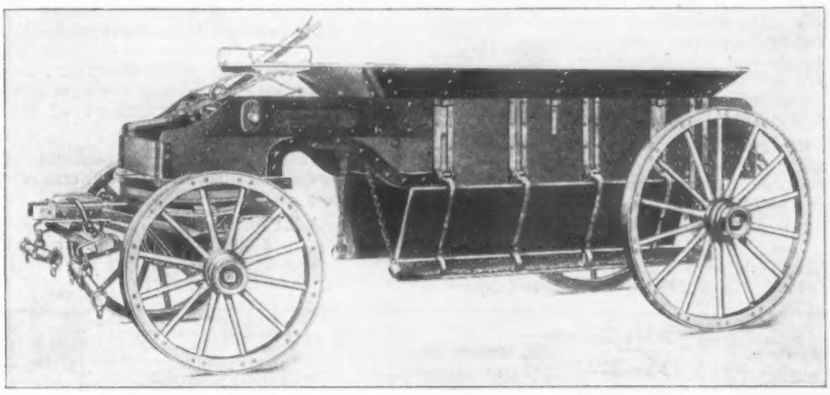


Fig. 1.—Improved Studebaker Ideal Dump Wagon.

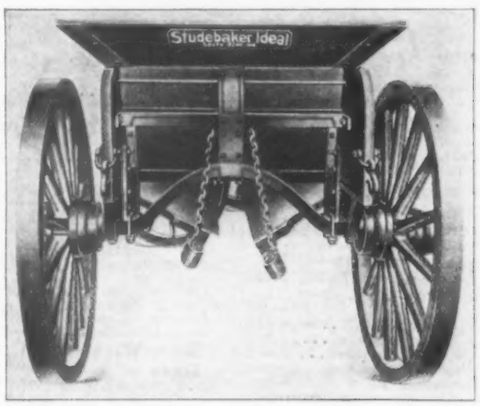


Fig. 2.—Rear View of Ideal Dump Wagon.

PAINTS, OILS AND COLORS

Animal, Fish and Vegetable Oils—

	℔ gal.
Linseed, City, raw	44 @45
City, Boiled	45 @46
State and Western, raw	42 @43
Raw Calcutta, in bbls	@70
Lard, Extra Prime, Winter	75 @76
Extra No. 1	56 @57
No. 1	49 @52
Cotton-seed, Crude, f.o.b. mills	41 @42
Summer Yellow, Prime	54½@56
Summer White	55 @57
Yellow Winter	54 @56
Sperm, Crude	59 @60
Natural Winter	72 @73
Bleached Winter	75 @76
Bleached Winter, Extra	@..
Tallow, Prime	60 @61
Whale, Crude	35 @36
Natural Winter	46 @47
Bleached Winter	48 @49
Extra Bleached Winter	50 @51
Menhaden, Brown, Strained	32 @33
Light Strained	32 @33
Northern	@..
Southern	26 @27
Cocoanut, Ceylon	℔ lb 9⅝@ 9¾
Cochin	℔ lb 10½@10¾
Cod, Domestic, Prime	36 @38
Newfoundland	40 @42
Red, Elaine	41 @46
Saponified	℔ lb 6½@ 6¾
Olive, Italian, bbls., Yellow	87½@1.00
Neatsfoot, Prime	56 @57
Palm, Logos	℔ lb 7 @ 7¼

Mineral Oils—

	℔ gal.
Black, 29 gravity, 25@30 cold test	11½@12
29 gravity, 15 cold test	12½@13½
Summer	11½@12
Cylinder, light filtered	19 @20
Dark, filtered	16½@17½
Paraffine, 903-907 gravity	14 @14½
903 gravity	13 @13½
883 gravity	10¾@11¼
Red	13 @14½

Miscellaneous—

Barytes:	
White, Foreign	℔ ton $18.50@20.50
Amer, floated	℔ ton 19.00@20.00
Off color	℔ ton 13.00@16.50
Chalk, in bulk	℔ ton 3.00@ 3.25
In bbls	℔ 100 lb ....@ .35
China Clay, Imported	℔ ton 11.00@17.50
Cobalt, Oxide	℔ 100 lb 2.50@ 2.60
Whiting, Commercial	℔ 100 lb .43@ .52
Gilders	℔ 100 lb .55@ .65
Ex. Gilders	℔ 100 lb .60@ .65

Putty, Commercial—℔ 100 lb

In bladders	$1.70 @1.85
In bbls. or tubs	1.20 @1.45
In 1 lb to 5 lb cans	2.65 @2.95
In 12½ to 50 lb cans	1.50 @1.90

Spirits Turpentine—℔ gal.

In Oil bbls	67 @67½
In machine bbls	67½@68

Glue—

	℔ lb
Cabinet	12 @15
Common Bone	7½@ 9
Extra White	18 @21
Foot Stock, White	12 @14
Foot Stock, Brown	9 @11
German Hide	12 @18
French	10 @40
Irish	13 @16
Low Grade	10 @12
Medium White	14 @17

Gum Shellac—

	℔ lb
Bleached, Commercial	46 @48
Bone, Dry	57 @..
Button	49 @50
Diamond I	60 @61
Fine Orange	52 @57
A. C. Garnet	46 @47
Kala Button	35 @36
D. C	63 @64
Octagon B	56 @57
T. N	48 @49
V. S. O	60 @61

Colors in Oil—

	℔ lb
Black, Lampblack	12 @14
Blue, Chinese	36 @46
Blue, Prussian	32 @36
Blue, Ultramarine	13 @16
Brown, Vandyke	11 @14
Green, Chrome	12 @16
Green, Paris	@21
Sienna, Raw	12 @15
Sienna, Burnt	12 @15
Umber, Raw	11 @14
Umber, Burnt	11 @14

White Lead, Zinc, &c.—

	℔ lb
Lead, English white, in Oil	9⅝@10
Lead, American White:	
Lots of 500 lb or over, in Oil	@ 7½
Lots less than 500 lb, in Oil	@ 8
Lead, White, in oil, 25 lb tin pails, add to keg price	@ ¼
Lead, White, in oil, 12½ lb tin pails, add to keg price	@ 1
Lead, White, in oil, 1 to 5 lb ass'ted tins, add to keg price	@ 1½
Lead, American, Terms: For lots 12 tons and over ¼¢ rebate; and 2% for cash if paid in 15 days from date of invoice; for lots of 500 lbs. and over 2% for cash if paid in 15 days from date of invoice, for lots of less than 500 lbs. net.	℔ lb
Zinc, American, dry	5⅝@ 5½
Zinc, French:	
Antwerp, Red Seal, dry	8¾
Antwerp, Green Seal, dry	10¾
Paris, Red Seal, dry	9¼
Paris, Green Seal, dry	11
Zinc, V. M. French, in Poppy Oil:	
Green Seal:	
Lots of 1 ton and over	13¼@13⅝
Lots of less than 1 ton	13⅜@13⅞
Zinc, V. M. French, in Poppy Oil:	
Red Seal:	
Lots of 1 ton and over	11⅞@12¼
Lots of less than 1 ton	12⅛@12⅝

Discounts.—French Zinc.—Discounts to buyers of 10 bbl. lots of one or mixed grades, 1%; 25 bbls., 2%; 50 bbls., 4%.

Dry Colors—

	℔ lb
Black, Carbon	6½@10
Black Drop, American	7½@ 8
Black Drop, English	5 @15
Black, Ivory	16 @20
Lamp, Com	4 @ 6
Blue, Celestial	4 @ 6
Blue, Chinese	31 @33
Blue, Prussian	29 @32
Blue, Ultramarine	4½@15
Brown, Spanish	½@ 1
Carmine, No. 40	$3.10@3.25
Green, Chrome, ordinary	3½@ 7
Green, Chrome, pure	17 @25
Lead, Red, bbls., ⅛ bbls., kegs	@ 7¾
Litharge, bbls., ⅛ bls., kegs	@ 7¾
Ocher, American	℔ ton $8.50@16.00
American Golden	2½@ 3½
French	1½@ 2
Foreign Golden	3 @ 4
Orange Mineral, English	10 @12
French	10¾@12
German	8½@10
American	8¾@ 9
Red, Indian, English	4½@ 6
American	3 @ 3½
Red, Turkey, English	4 @10
Red, Tuscan, English	7 @10
Red, Venetian, Amer.	℔ 100 lb $0.50@1.75
English	℔ 100 lb $1.15@1.60
Sienna, Italian, Burnt and Powdered	3 @ 6
Italian, Raw, Powdered	3 @ 7
American, Raw	1½@ 2
American Burnt and Pow'd	1½@ 2
Talc, French	℔ ton $18.00@25.00
American	℔ ton 15.00@25.00
Terra Alba, French	℔ 100 lb .80@ 1.00
English	℔ 100 lb .80@ 1.00
American	℔ 100 lb, No. 1, .75@ .90
American	℔ 100 lb, No. 2, .60@ .65
Umber, T'key, Bnt, & Pow.	2 @ 3½
Turkey, Raw and Powdered	2½@ 3½
Burnt, American	1½@ 2
Raw, American	1½@ 2
Yellow Chrome, Pure	12 @14
Vermilion, American Lead	7 @25
Quicksilver, bulk	65 @..
Quicksilver, bags	@65
English, Imported	65 @70
Chinese	$0.90@1.00

Current Hardware Prices.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer—are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 33⅓ @ 33⅓ & 10% signifies that the price of the goods in question ranges from 33⅓ per cent. discount to 33⅓ and 10 per cent. discount.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued May, 1906, which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Adjusters, Blind—

Domestic, ₩ doz. $3.00.....33⅓%
North's 10%
Zimmerman's—See Fasteners, Blind.

Window Stop—

Ives' Patent.....35%
Taplin's Perfection.....35%

Ammunition—See *Caps, Cartridges, Shells, &c.*

Anti-Rattlers—

Fernald Mfg. Co. Burton Anti-Rattlers, ₩ doz. pairs, Nos. 1, $0.75; 2, $0.60; 4, $1.00; 5, $0.50.
Fernald Quick Shifter, ₩ doz. pairs .....$2.00@$3.00

Anvils—American—

Eagle Anvils.....₩ lb @8½¢
Hay-Budden, Wrought.....9½@9¾¢
Trenton .....₩ lb 9½@9¾¢

Imported—

Peter Wright & Sons, ₩ lb, 84 to 349 lb, 11¢; 350 to 600 lb, 11½¢.

Anvil, Vise and Drill—

Millers Falls Co., $18.00.....15&10%

Apple Parers—See *Parers, Apple, &c.*

Aprons, Blacksmiths'—

Livingston Nail Co.....33⅓%

Augers and Bits—

Com. Double Spur..70&5@70&10%
Jennings' Patn., reg. finish.....60&5@60&10%
Black Lip or Blued...65@65&5%
Boring Mach. Augers.....70%
Car Bits, 12-in. twist.....40&10%
Ford's Auger and Car Bits.....40&5%
Ft. Washington Auger Co., Conard's 35%
Forstner Pat. Auger Bits.....25%
C. E. Jennings & Co.:
No. 10 ext. lip, R. Jennings' list..25%
No. 30, R. Jennings' list.....40&7½%
Russell Jennings'.....25&10&2½%
L'Hommedieu Car Bits.....15%
Mayhew's Countersink Bits.....45%
Pugh's Black.....20%
Pugh's Jennings' Pattern.....35%
Snell's Auger Bits.....60%
Snell's Bell Hangers' Bits.....60%
Snell's Car Bits, 12-in. twist.....60%
Snell's King Auger Bits.....50%
Wright's Jennings' Bits.....50%

Bit Stock Drills—See *Drills, Twist.*

Expansive Bits—

Clark's small, $18; large, $26....50&10%
Clark's Pattern, No. 1, ₩ doz. $36; No. 2, $18.....60&10&10%
Ford's, Clark's Pattern.....60%
C. E. Jennings & Co., Steer's Pat..25%
Lavigne Pat., small size, $18.00; large size, $26.00.....60&10&10%
Swan's 60%

Gimlet Bits—

Per gro.
Common Dble. Cut....$3.00@3.25
German Pattern, Nos. 1 to 10, $4.75; 11 to 13, $5.75

Hollow Augers—

Bonney Pat., per doz..$5.50@6.00
Ames .....25&10%
Universal 20%
Wood's Universal.....25%

Ship Augers and Bits—

Ship Augers.....40&10%
Nord's .....33⅓&5%
C. E. Jennings & Co.:
L'Hommedieu's 15%
Watrous' .....33⅓&7½%
Snell's 40%

Awl Hafts—See *Handles, Mechanics' Tool.*

Awls—

Brad Awls:
Handled .....gro. $2.75@3.00
Unhdld, Shldered...gro.63@66¢
Unhandled, Patent..gro.66@70¢
Peg Awls:
Unhandled, Patent..gro. $1@3¼¢
Unhdld, Shldered..gro. 65@70¢
Scratch Awls:
Handled, Com...gro. $3.50@4.00
Handled, Socket..gro.$11.50@12.00

Awl and Tool Sets—See *Sets, Awl and Tool.*

Axes—

Single Bit, base weights: Per doz.
First Quality.....$4.75@5.00
Second Quality.....$4.25@4.50
Double Bit, base weights:
First Quality.....$7.00@7.50
Second Quality.....$6.50@6.75

Axle Grease—See *Grease, Axle*

Axles—Iron or Steel

Concord, Loose Collar..4½@5 ¢
Concord, Solid Collar..4¾@5¼¢
No. 1 Common, Loose..5½@4 ¢
No. 1¼ Com., New Styles5¾@4¼¢
No. 2 Solid Collar.....3¾@4¼¢
Half Patent:
Nos. 7, 8, 11 and 12....70@75%
Nos. 13 to 14.....70@75%
Nos. 15 to 18.....75@75&5%
Nos. 19 to 22.....75@75&5%

Boxes, Axle—

Common and Concord, not turned lb., 4½@5¢
Common and Concord, turned. lb., 5½@6¢
Half Patent.....lb., 9½@10¢

Bait—Fishing—

Hendryx:
A Bait.....20%
B Bait.....25%
Competitor Bait.....20&5%

Balances—Sash—

Caldwell new list.....50%
Pullman .....50&10@60%

Spring—

Spring Balances.....50&10@60%
Chatillon's:
Light Spg. Balances.....50@50&10%
Straight Balances.....40@40&10%
Circular Balances.....50&10%
Large Dial.....30%

Barb Wire—See *Wire, Barb.*

Bars—Crow—

Steel Crowbars, 10 to 40 lb.... per lb., 2¾@3¢

Towel

No. 10 Ideal, Nickel Plate..₩ gro. $8.50

Beams, Scale—

Scale Beams.....40%
Chattillon's No. 1.....30%
Chattillon's No. 2.....40%

Beaters, Carpet—

Holt-Lyon Co.:
No. 12 Wire Coppered ₩ doz. $0.80; Tinned $0.85
No. 11 Wire Coppered ₩ doz. $1.15; Tinned $1.20
No. 10 Wire Tinned.....₩ doz. $1.50
Western W. G. Co.:
No. 1 Electric.....₩ gro. $7.80
No. 2 Buffalo.....₩ gro. $9.00
No. 3 Perfection Dust.....₩ gro. $8.00

Egg—

Holt-Lyon Co.:
Holt, per doz., No. 5, Jap'd, $0.80; No. A, Jap'd, $1.15; No. B, Jap'd, $1.85; No. 6, Jap'd, $1.65, Lyon, Jap'd, per doz., No. 2, $1.35.
Taplin Mfg. Co.:
Improved Dover, per gro., No. 60, $6.00; No. 75, $6.50; No. 100, $7.00; No. 102, Tin'd, $8.50; No. 150, Hotel, $15.00; No. 152, Hotel Tin'd, $17.00; No. 200, Tumbler, $8.50; No. 202, Tumbler Tin'd, $9.50; No. 300, Mammoth, per doz., $25.00.
Turner & Seymour Mfg. Co.:
T. & S. Dover.....$6.00
Western, W. G. Co., ₩ gro., Buffalo, No. 2, $8.00; Perfection, No. 3, $9.00.
Wonder (R. M. Co.)..₩ gro. net, $6.25

Bellows—

Blacksmith, Standard List..
Split Leather.....65%
Grain Leather.....60%

Hand—

Inch..	*6*	*7*	*8*	*9*	*10*
Doz..	*$5.50*	*6.15*	*6.60*	*7.15*	*7.70*

Molders—

Inch..	*9*	*10*	*11*	*12*	*14*
Doz..	*$8.00*	*9.00*	*10.50*	*12.50*	*14.50*

Net Prices.

Bells—Cow—

Ordinary Goods...75&5@75&10&5%
High grade.....70&10@75%
Jersey .....75&10%
Texas Star.....50%

Door—

Abbe's Gong.....40@40&10%
Barton Gong.....50%
Home R. & E. Mfg. Co.'s.....55&10%
Trip Gong.....50@50&10%
Yankee Gong.....40&10@50%

Hand—

Polished, Brass.....50@50&10%
White Metal.....50@50&5%
Nickel Plated.....40&10@50%
Swiss .....50&10@50&10&5%
Cone's Globe Hand Bells.....33⅓@35%
Silver Chime.....25@30%

Miscellaneous—

Farm Bells.....lb., 2¼@2½¢
Church and School.....60%
Table Call Bells.....50@50&10%

Belting—Leather—

Extra Heavy, Short Lap..60&5%
Regular Short Lap....60&10&5%
Standard 70%
Light Standard.....70&5%
Cut Leather Lacing.....45%
Leather Lacing Sides, per sq. ft. 25¢

Rubber—

Agricultural (Low Grade)..... 75@75&5%
Common Standard....70@70&10%
Standard .....60&5@60&10%
Extra .....60@60&5%
High Grade.....50&5@50&10%

Bench Stops—See *Stops, Bench*

Benders and Upsetters, Tire—

Detroit Perfected Tire Bender.....40%
Detroit Stoddard's Lightning Tire Upsetters, No. 1, $1.25; No. 2, $7.25; No. 3, $10.50; No. 4, $16.25; No. 5, $20.50.
Green River Tire Benders and Upsetters 20%

Bicycle Goods—

John S. Leng's Son & Co.'s 1907 list: Chain, Parts, Spokes.....50%
Tubes 60%

Bits—

Auger, Gimlet, Bit Stock Drills, &c.—See *Augers and Bits.*

Blocks—Tackle—

Common Wooden.....75%
Hartz St. Tackle Blocks.....50@50&5%
B. & L. B. Co.:
Boston Wood Snatch, 50%; Eclipse Steel, 75%; Hollow Steel, 50&10%; Star Wire Rope, 50%; Tarbox Metal Snatch, 50%; Tarbox New Style Steel, 50&10%; Wire Rope Snatch, 50%.
Lane's Patent Automatic Lock and Junior 30%
Stowell's Novelty, Mal. Iron.....50%
Stowell's Loading.....50&10%
See also Machines, Hoisting.

Boards, Stove—

Paper and Wood Lined.....40%
Embossed 50%

Boards, Wash—See *Washboards.*

Bobs, Plumb—

Keuffel & Esser Co.....33⅓%

Bolts—

Carriage, Machine, &c.—

Common Carriage (cut thread): ⅜ × 6 and smaller..70&12½@—%
Larger and Longer..60&12½@—%
Phila. Eagle $3.00 list May 2½,'99 90%
Bolt Ends.....65@65&5%
Machine, ⅜ x 4 and smaller.. 70&12½@—%
Machine, larger and longer.. 60&7½@—%

Door and Shutter—

Cast Iron Barrel, Japanned, Round Brass Knob:

Inch	*3*	*4*	*5*	*6*	*8*
Per doz.	*$0.30*	*.35*	*.45*	*.60*	*.80*

Cast Iron Spring Foot, Jap'd:

Inch	*6*	*8*	*10*
Per doz.	*$1.20*	*1.50*	*2.25*

Cast Iron Chain, Flat, Japanned:

Inch	*6*	*8*	*10*
Per doz.	*$1.00*	*1.40*	*1.85*

Cast Iron Flat Shutter, Jap'd., Brass Knobs:

Inch	*6*	*8*	*10*
Per doz.	*$0.75*	*.95*	*1.25*

Wrought Barrel Japd..80@80&10%
Barrel Bronzed.....60&10%
Spring .....70&10@70&10&10%
Shutter .....50&5@50&10&5%
Square Neck.....75@75&10%
Square .....70&10@10%
Ives' Patent Door.....50%

Plow and Stove—

Plow .....65&10@—%
Stove .....85@85&5%

Tire—

Common Iron.....80%
Norway Iron.....80%
American Screw Company:
Norway Phila., list Oct. 16, '84...80%
Eagle Phila., list Oct. 16, '84....82½%
Bay State, list Dec. 28, '99.....80%
Franklin Moore Co.:
Norway Phila., list Oct. 16, '84...80%
Eagle Phila., list Oct. 16, '84....82½%
Eclipse, list Dec. 28, '99.....80%
Mount Carmel Bolt Co.:
Norway Phila., list Oct. 16, '84....80%
Eagle Phila., list Oct. 16, '84....82½%
Mount Carmel, list Dec. 28, '99...80%
Russell, Burdsall & Ward Bolt & Nut Co.:
Empire, list Dec. 28, '99.....80%
Norway Phila., list Oct., '84.....80%
Shelton Co.:
Tiger Brand, list Dec. 28, '99....80%
Phila., Eagle, list Oct. 16,1884..82½%
Upson Nut Co.:
Tire Bolts.....72½%

Borers, Tap—

Borers Tap, Ring, with Handle:

Inch.....	*1¼*	*1½*	*1¾*	*2*
Per doz...	*$4.80*	*5.60*	*6.40*	*8.00*
Inch	*2¼*	*2½*		
Per doz	*$8.65*	*11.50*		

Enterprise Mfg. Co. No. 1, $1.25; No. 2, $1.75; No. 3, $2.50 each.....25%

Boxes, Mitre—

C. E. Jennings & Co.....30%
Langdon, New Langdon and Langdon Improved, 20&10%; Langdon Acme .....15&10%
Perfection 40%
Seavey 40%
Stanley R. & L. Co.: Nos. 240 to 460, 30%; Nos. 50 and 60.....35%

Braces—

Common Ball, American..$1.25@1.30
Barber's .....50&10&10@60&10%
Fray's Genuine Spofford's.....60%
Fray's No. 70 to 120, 81 to 123, 207 to 414 .....60%
C. E. Jennings & Co.....50&5%
Mayhew's Ratchet.....60%
Mayhew's Quick Action Hay Pat...50%
Millers Falls Drill Braces.....25&10%
P. S. & W. Co., Peck's Pat.60@60&5%
Stanley R. & L. Co.:
Stanley, 35%; Victor.....45%

Brackets—

Wrought Steel.....70&10@75&10%
Griffin's Pressed Steel..75&10@75&10&5%
Griffin's Folding Brackets.....70&10%
Stowell's Cast Shelf, 75%; Sink...50%
Western, W. G. Co., Wire.....60&10%

Bright Wire Goods—See *Wire and Wire Goods.*

Broilers—

Kilbourne Mfg. Co.....75&20%
Western, W. G. Co.....80%
Wire Goods Co.....75@75&10%

Buckets, Galvanized—

M'f'gr's list, price per gross.

	Quart..	*10*	*12*	*14*	
Water, Reg...	*25.35*	*28.00*	*32.00*		*Net Price.*
Water, Hem...	*45.35*	*48.00*	*52.00*		
Fire, Rd. Btm.	*32.00*	*34.65*	*38.65*		
Well	*37.35*	*41.35*	*45.35*		

Bucks, Saw—

Hoosier.....₩ gro. $36.00

Bull Rings—See *Rings, Bull*

Butts—Brass

Wrought, High List, Oct. 26, '06. 45@45&10%
Cast Brass, Tiebout's.....40%

Cast Iron—

Fast Joint, Broad....40&10@50%
Fast Joint, Narrow...40&10@50%
Loose Joint.....70&10@75%
Loose Pin.....70&10@75%
Mayer's Hinges.....70@70&5
Parliament Butts.....70@70&5

Wrought Steel—Discount.

Reversible and Broad.....70&5%
Light Reversible, Light Narrow .....70&5%
Loose Joint, Narrow, Light Inside Blind, etc.....70%
Back Flaps, Table Chest....65%

Cages, Bird—

Hendryx Brass: Series 3000, 5000, 1100, 10%; 1200, 25%; 200, 300, 800, 900 .....40%

Hendryx Bronze; Series 700, 800..40%
Hendryx Enameled.....40%

Calipers—See *Compasses.*

Calks, Toe and Heel—

Blunt, 1 prong, per lb., 4¼@4¾¢
Sharp, 1 prong, per lb., 4¾@5¼¢
Burke's Blunt, 4¼@4¾¢; Sharp, 4¾@5¼¢
Gautier, Blunt, 4@4¼¢; Sharp, 4½@4¾¢
Perkins', Blunt, ℔ lb, 3.65¢; Sharp, 4.15¢

Can Openers—
See *Openers, Can.*

Cans, Milk—

	5	8	10 gal.
Illinois Pattern	$1.35	1.85	2.05 each.
New York Pattern	1.50	2.20	2.45 each.
Baltimore Pattern	1.50	2.20	2.45 each.
Dubuque	1.35	1.60	1.75 each.

Cans, Oil—

Buffalo Family Oil Cans:

3	5	10 gal.
$18.00	60.00	129.60 gro., net.

Caps, Percussion—

Eley's E. B.....52@55¢
G. D.....per M 34@35¢
F. L.....per M 40@42¢
G. E.....per M 48@50¢
Musket.....per M 62@63¢

Primers—

Berdan Primers, $2 per M..20&5%
Primer Shells and Bullets..15&10%
All other primers per M.$1.52@1.60

Cartridges—

Blank Cartridges:
32 C. F., $5.50.....10&5%
38 C. F., $7.00.....10&5%
22 cal. Rim, $1.50.....10&5%
32 cal. Rim, $2.75.....10&5%
B. B. Caps, Con. Ball, Sicgd..$1.90
B. B. Caps, Round Ball....$1.49
Central Fire.....25%
Target and Sporting Rifle..15&5%
Primed Shells and Bullets.15&10%
Rim Fire, Sporting.....50%
Rim Fire, Military.....15&5%

Casters—

Bed.....65&10%
Plate.....60&5%
Philadelphia.....70&10%
Acme, Ball Bearing.....33⅓%
Boss.....70&10%
Boss Anti-Friction.....70&10%
Gem (Roller Bearing).....80%
Martin's Patent (Phoenix).....45%
Standard Ball Bearing.....45%
Tucker's Patent low list.....30%
Yale (Double Wheel) low list.....50%

Cattle Leaders—
See *Leaders, Cattle.*

Chain, Proof Coil—

American Coil, Straight Link:

5-16	¼	5-16	⅜	7-16	½	9-16
$8.77	6.17	5.02	4.57	4.37	4.27	4.22
⅝	¾	⅞ to 1	1⅛ to 1¼ inch.			
$4.17	4.07	4.02	4.12			

In cask lots, deduct 25¢.
German Coil.....60&10&10@70%

Halter—

Halter Chains.....60@60&5%
German Pattern Halter Chains, list July 24, '97.....60&10&5%
Covert Mfg. Co.
Halter.....35&5%

Cow Ties—
See *Halters and Ties.*

Trace, Wagon, &c.—

Traces, Western Standard: 100 pr.
6½—6-3, Straight, with ring..$28.00
6½—6-2, Straight, with ring..$29.00
6½—8-2, Straight, with ring..$32.00
6½—10-2, Str'ght, with ring..$37.00

NOTE.—Add 2c per pair for Hooks. Twist Traces; add per pair for Nos. 2 and 3, 2c; No. 1, 3c; No. 0, 4c to price of Straight Link.
Eastern Standard Traces, Wagon Chain, &c.....60%

Miscellaneous—

Jack Chain, list July 10, '93:
Iron.....60&10%
Brass.....50&10%
Safety and Plumbers' Chain, 60&10%
Gal. Pump Chain.....lb. 4@4½%
Covert Mfg. Co.:
Breast, Halter, Heel, Rein, Stallion.....40%
Oneida Community:
American Halter, Dog and Kennel Chains.....35&2½@40%
Niagara Dog Leads and Kennel Chains.....45@60&5%
Wire Goods Co.:
Dog Chain.....70&10%
Universal Dbl.-Jointed Chain.....50%

Chain and Ribbon, Sash—

Oneida Community:
Steel Chain.....60%
Pullman:
Bronze Chain, 60%; Steel Chain, 60&10%
Sash Chain Attachments, per set..8¢
Aluminoy Sash Ribbon, per 100 ft.....$1.25@$3.00
Sash Ribbon Attachments, per set..8¢

Chalk—(From Jobbers.)

Carpenters' Blue....gro., 50@55¢
Carpenters' Red.....gro., 55@56¢
Carpenters' White...gro., 40@45¢

Checks, Door—

Bardsley's.....45%
Pullman, per gro.....$54.00
Russwin.....33⅓%

Chests, Tool—

American Tool Chest Co.:
Boys' Chests, with Tools.....55%
Youths' Chests, with Tools.....40%
Gentlemen's Chests, with Tools..30%
Farmers', Carpenters,' etc., Chests, with Tools.....25%
Machinists' and Pipe Fitters' Chests, Empty.....50%
Tool Cabinets.....50%
C. E. Jennings & Co.'s Machinists' Tool Chests.....33⅓&10%

Chisels—

Socket Framing and Firmer

Standard List.....70&10@75%
Buck Bros.....30%
C. E. Jennings & Co.:
Socket Firmer No. 10.....60%
Socket Framing No. 15.....60%
Swan's.....66⅔@70%
L. & I. J. White Co.....30@30&5%

Tanged—

Tanged Firmers.....30&5@35%
Buck Bros.....30%
C. E. Jennings & Co. Nos. 191, 181..25%
L. & I. J. White Co.....35&5%

Cold—

	lb.
Cold Chisels, good quality	*13@15¢*
Cold Chisels, fair quality	*11@12¢*
Cold Chisels, ordinary	*9@10¢*

Chucks—

Almond Drill Chucks.....35%
Almond Turret Six-Tool Chuck.....40%
Beach Pat., each $8.00.....35&5%
Empire.....25%
Blacksmiths'.....25%
Jacobs' Drill Chucks.....35%
Pratt's Positive Drive.....25%
Skinner Patent Chucks:
Independent Lathe Chucks.....40%
Universal, Reversible Jaws.....40%
Combination, Reversible Jaws.....40%
Drill Chucks, New Model, 25%; Standard, 40&10%; Skinner Pat., 25%; Positive Drive.....40%
Planer Chucks.....30%
Face Plate Jaws.....40%
Standard Tool Co.:
Improved Drill Chuck.....45%
Union Mfg. Co.:
Combination, Nos. 1, 2, 3, 4, 5, 6, 7, 8 and 17, 40%; No. 21.....35%
Scroll Combination, Nos. 82 and 84.....30%
Geared Scroll, Nos. 33, 34 and 35..30%
Independent Iron, Nos. 18 and 318.35%
Independent Steel, No. 64.....25%
Union Drill, Nos. 000, 00, 100, 101, 102, 103, 104.....35%
Union Czar Drill.....25%
Universal 11, 12, 16, 17, 13, 14, 15..35%
Universal, No. 42.....30%
Iron Face Plate Jaws, Nos. 28, 30, 48 and 50.....35%
Steel Face Plate Jaws, Nos. 70 and 72.....30%
Westcott Patent Chucks:
Lathe Chucks.....50%
Little Giant Auxiliary Drill.....50%
Little Giant Double Grip Drill..50%
Little Giant Drill, Improved.....50%
Oneida Drill.....50%
Scroll Combination Lathe.....50%

Clamps—

Adjustable, Hammers'.....20@20&5%
Carriage Makers', P., S. & W. Co.....40&10@50%
Besly, Parallel.....33⅓&10%
Lineman's, Utica Drop Forge & Tool Co.....40%
Wood Workers, Hammers'.....40&10%
Saw Clamps, see Vises, Saw Filers'.

Cleaners, Drain—

Iwan's Champion, Adjustable.....55%
Iwan's Champion, Stationary.....45%

Sidewalk—

Star Socket, All Steel, ℔ doz. $4.05 net
Star Shank, All Steel, ℔ doz. $3.24 net
W. & C. Shank, All Steel, ℔ doz., 7½ in., $3.00; 8 in., $3.25.

Cleavers, Butchers'—

Foster Bros.....30%
Fayette R. Plumb.....30%
L. & I. J. White Co.....30%

Clippers, Horse and Sheep—

Chicago Flexible Shaft Company:
1902 Chicago Horse, each..$10.75
20th Century Horse, each..$5.00
Lightning Belt Horse, each $15.00
Chicago Belt Horse, each $20.00
Stewart's Enclosed Gear Horse, each.....$8.75
Stewart's Patent Sheep Shearing Machine, each.....$12.75
Stewart Enclosed Gear Shearing Machine, No. 8, each..$9.75
} 30%

Clips, Axle—

Regular Styles, list July 1. '05.80%

Cloth and Netting, Wire—See *Wire, &c.*

Cocks, Brass—

Hardware list:
Plain Bibbs, Globe, Kerosene, Racking, Liquor, Bottling, &c.....60&10@65%
Compression Bibbs..55&10@60%

Coffee Mills—
See *Mills, Coffee.*

Collars, Dog—

Nickel Chain, Walter B. Stevens & Son's list.....40%
Leather, Walter B. Stevens & Son's list.....40%

Combs, Curry—

Metal Stamping Co.....40%

Compasses, Dividers, &c.

Ordinary Goods.....70&10@75%
Wm. Schollhorn Co.:
Excelsior Dividers.....55%
Lodi Dividers.....75%

Conductor Pipe,—

L. C. L. to Dealers:

	Galvanized Galv. Steel.	Charcoal Iron.	Copper. 14, 16&20 oz.
Eastern:			
70%	50&6½%		50%
Central:			
65&10%	55&2½%		20&10%
Western and Southern:			
65&5%	50&7½%		20&7½%
So. Western			
50&25&2½%	50%		20&5%

Terms, 60 days; 2% cash 10 days. Factory shipments generally delivered.
See also Eave Troughs.

Coolers, Water—

Gal. each..	2	3	4	6	8
Labrador	$1.20	$1.50	$1.80	$2.10	$2.70
Gal.	3	4	6	8	
Iceland, ea.	$1.80	$2.10	$2.40	$3.00	
Gal.	2	3	4	6	8
Galvanized, ea.	$1.85	$2.00	$2.25	$2.90	$3.90
Galvanized, Lined, side handles, Gal.	2	3	4	6	8
Each	$1.95	$2.15	$2.40	$3.30	$4.15
White Enameled, 25%; Agate Lined, 25%					

Coopers' Tools—
See *Tools, Coopers'.*

Coppers' Soldering—

Soldering Coppers, 3 lbs. to pair and heavier, 32@35¢; lighter than 3 lb. to pair.....34@37¢

Cord—Sash—

Braided, Drab.....lb. 35¢
Braided, White, Com., Nos. 8 to 12, 26¢; No. 7, 26½¢; No. 6, 27½¢.
Cable Laid Italian, lb., No. 18..37¢
Italian, lb., A, No. 18, 25¢; B, 22¢
Common India.....lb., 11@11½¢
Cotton Sash Cord, Tw'ted.18@20¢
Patent Russia.....lb...20¢
Cable Laid Russia.....lb...21¢
India Hemp, Br'd'd.....lb...21¢
India Hemp, Twisted..lb.13@14¢
Patent India, Twisted...lb...17¢
Anniston Cordage Co.: ℔ lb, solid Braided, Nos. 8 to 12, $0.24; No. 7, $0.24½; No. 6, $0.25½; ℔ doz., 50 ft., Oriole, $2.00; 50 ft., Columbia, $0.85; 50 ft., Victors, $1.00; 50 ft., 6-Thread, $1.10; 60 ft., 3-Thread, $0.95; 50 ft., Manila, $1.40; 60 ft., Jute, $0.75.
Pearl Braided, cotton, No. 6, ℔ lb, 27½¢; No. 7, 26½¢; Nos. 8 to 12, 26¢
Eddystone, Braided, Nos. 8 to 12, 26¢; 7, 26½¢; 6, 27½¢.
Harmony Cable Laid Italian, Nos. 7 to 10.....℔ lb 23 ¢
Pullman:
Wire Sash Cord.....10%
Sash Cord Attachments, per doz.10¢
Samson, Nos. 8 to 12:
Braided, ℔ lb., Drab Cotton, 55¢; Italian Hemp, 40¢@50¢; Linen, 65¢; White Cotton, 50¢; Spot Cord.....50¢
Massachusetts, White....℔ lb 40¢
Massachusetts, Drab.....℔ lb 45¢
Phoenix, White, Nos. 8 to 12, 27¢;
Silver Lake, per lb.
A, Drab, 45¢; A, White, 40¢; B, Drab, 40¢; B, White, 35¢; Italian Hemp, 40¢; Linen..57½¢
} 15%
See also Chain and Ribbon.

Wire, Picture—

List July 10, 1906...85&10&10@—
Hendryx Standard Wire Picture Cord, old list, 85&10%
Turner & Stanton Co, Wire Picture Cord.....90%

Cradles—

Grain.....40&12½%

Crayons—

White Round Crayons, Cases, 100 gro., $6.50@$7.50 at factory, but lower prices made by jobbers
Zelnicker's Lumber, ℔ grc.
White and Purple, Indelible....$7.50
Blue, Red, Green, Yellow and Terra Cotta, $6.50; Black.....$4.00
Giant Lumber, 5¼ in. x 15-16 in. round, all colors, $16.25; Indelibles.....$18.75
Genuine Soapstone, Metal Workers', 5 in. x ¼ in. Round, $2.50; 5 in. x ¼ in. Square, $1.75; 5 x ½ x 3-16, $2.50; 5 x 1¼ x 3-16.....$3.00

Crooks, Shepherds'—

Fort Madison, per doz., Heavy, $7.00; Light.....$6.50

Crow Bars—See *Bars, Crow.*

Cultivators—

Victor Garden.....50%

Cutlery, Table—

International Silver Company:
No. 12 M'd'm Knives, 1847, ℔ doz. $3.50
Star, Eagle, Rogers & Hamilton and Anchor.....℔ doz. $3.00
Wm. Rogers & Son.....℔ doz. $2.50

Cutters—Glass—

H. H. Mayhew Co.....40%
Red Devil.....50%
Smith & Hemenway Co.....50%
Woodward.....40%

Meat and Food—

American.....30%

Nos.	401	402	403	404	405	406	407
Each	$5	$7	$10	$12	$25	$50	$60

Enterprise:

Nos.	5	10	12	22	32	
Each	$2	$3	$2.75	$4.50	$6	25@25&7½%

No. 202, $1.50.....40&7½%

Dixon's	2	3	4
Nos.	$14.00	$17.00	$19.00

℔ doz. 30@30&5%

			$30.00

Ideal.....40@40&5%
Little Giant.....℔ doz. 40@50%

Nos.	305	310	312	320	322
	$35.00	$48.00	$44.00	$72.00	$68.00

N. E. Food Choppers.....25%
New Triumph No. 605, ℔ doz. $24.00.....40@50%
Russwin Food, No. 1, $24.00; No. 2, $27.00.....45&10&10%
Woodruff's.....℔ doz. 30@30&5%

Nos.	100	150
	$15.00	$18.00

Enterprise Beef Shavers.....25@30%

Slaw and Kraut—

Henry Disston & Sons:
Slaw and Kraut Cutters.....35%
Corn Graters.....30%
J. M. Mast Mfg. Co.:
Slaw Cutters, 1 Knife....℔ doz. $3.00
Combined Slaw Cutter and Corn Grater.....℔ doz. $4.00
Tucker & Dorsey Mfg. Co.:
Kraut Cutters.....40%
Slaw Cutters, 1 Knife..℔ gr. $18@$20
Slaw Cutters, 2 Knife..℔ gr. $22@$30

Tobacco—

All Iron, Cheap..doz. $1.25@$1.50
Enterprise.....25@30%
National, ℔ doz., No. 1, $21; No. 2, $18.....40%

Diggers, Post Hole, &c.—

Disston's:
Rapid, ℔ doz., $24.00.....25%
Samson, ℔ doz., $34.00.....25%
Iwan's Improved Post Hole Auger.40&5%
Vaughan Pattern Post Hole Augers, ℔ doz., $6.25
Perfection Post Hole Diggers, ℔ doz.....$8.75
Split Handle Post Hole Diggers, ℔ doz., $7.75
Kohler's, ℔ doz., Universal, $14.00; Little Giant, $12.00; Hercules, $10.00; Invincible, $9.00; Rival, $8.00; Pioneer.....$7.00
Never-Break Post Hole Diggers, ℔ doz., $24.00.....60%

Dividers—See *Compasses.*

Drawers, Money—

Tucker's Pat. Alarm Till No. 1, ℔ doz., $18; No. 2, $15; No. 3, $12; No. 4, $18.

Drawing Knives—
See *Knives, Drawing.*

Dressers, Emery Wheel—

Sterling Emery Wheel Dressers.....35%
Sterling Wheel Dresser Cutters.....35%

Drills and Drill Stocks—

Blacksmiths' Common Drilling Machines.....$1.50@$1.75
Breast, Millers Falls.....15&10%
Breast, P., S. & W.....40%
Goodell Automatic Drills.50&10@65&10%
Johnson's Automatic Drills, Nos. 2 and 3.....16⅔%
Johnson's Drill Points.....16⅔%
Millers Falls Automatic Drills.33⅓&10%
Ratchet, Curtis & Curtis.....25%
Ratchet, Parker's.....40%
Ratchet, Weston's.....40%
Ratchet, Weston's, Style H Improved.....40%
Ratchet, No. 012.....40%
Ratchet, Celebrated.....40%
Ratchet, Whitney's, P., S. & W...50%
Whitney's Hand Drill, No. 1, $10.00; Adjustable, No. 10, $12.00.....33⅓%

Twist Drills—

Bit Stock.....60&10&10@70%
Taper and Straight Shank.....60&10@60&10&5%

Drivers, Screw—

Screw D'ver Bits, per doz..45@50¢
Balsey's Screw Holder and Driver, ℔ doz., 2½-in., $6; 4-in., $7.50; 6-in., ℔.....50%
Buck Bros.' Screw Driver Bits.....30%
Champion.....50%
Disston's.....70%
Edson.....60%
Fray's Hol. H'dle Sets, No. 3, $12..50%
Ford's Brace Screw Drivers....40&10%
Gay's Double Action Ratchet.....35%
Goodell's Auto.....65@65&10%
Mayhew's Black Handle.....40%
Mayhew's Monarch.....40%
Millers Falls, Nos. 20 and 21...15&10%
Millers Falls, Nos. 11, 12, 41, 42..15&10%
New England Specialty Co.....30%
Smith & Hemenway Co., Neverturn, 40&5%; Elmora.....50%
H. D. Smith & Co.'s Perfect H'dle.40%
Stanley R. & L. Co.'s:
No. 64, Varn, Handles, 60&10%; No. 66, 70%; Defiance, 70%; Hurwood, 55%.
Swan's:
Nos. 7565 to 7568, 50%; No. 7540, 40&10%

Eave Trough, Galvanized—

	Galv. Steel.	Charcoal Iron.	Copper. 14, 16&20 oz.
Territory.			
Eastern:			
70&30%	70%		30%
Central:			
75&10&2½%	65&10%		20&10%
Western and Southern:			
75&7½%	65%		20&7½%
So. Western:			
75%	60&10%		20&5%

Terms.—2% for cash. Factory shipments generally delivered.
See also Conductor Pipe and Elbows.

Elbows and Shoes—

Factory shipments, all territories:
Galv. Steel and Galv. C. I. Standard Gauge.....80%
No. 26.....90%
No. 24.....85%
No. 22.....10%
Copper.....40&10%

Elbows, Stove Pipe—

Edwards, Standard Blue.....40&10&10%
Edwards, Royal Blue.....40&10&10%
Dover, one piece (R. M. Co.)....40&10%
Perfect Elbows.....40%

Emery, Turkish—

	¼ to ⅜:	½ to 220:	Flour.
Kegs.....lb. 5	¢	5¼¢	3¼¢
½ Kegs.....lb. 5¼	¢	5¾¢	3¾¢
¼ Kegs.....lb. 5½	¢	6 ¢	4 ¢
10-lb. cans, 10 in case...6½	¢	7 ¢	6 ¢
10-lb. cans, less than 10.....10	¢	10 ¢	8 ¢
Less quantity..10	¢	10 ¢	8 ¢

NOTE.—In lots 1 to 3 tons a discount of 10% is given.

Extractors, Lemon Juice
—See *Squeezers, Lemon.*

Fasteners, Blind—
Zimmerman's ..... 50&10%
Walling's ..... 40&10%

Cord and Weight—
Ives 33⅓%

Faucets—
Cork Lined ..... *50@50&10%*
Metallic Key, Leather Lined .. *60&10@10%*
Red Cedar ..... *40&10@50%*
Petroleum ..... *70&10@75%*
B. & L. B. Co.:
Metal Key ..... 60&10%
Star 60%
West Lock ..... 50&10%
John Sommer's Peerless Tin Key 40%
John Sommer's Boss Tin Key 50%
John Sommer's Victor Mtl. Key ..... 50&10%
John Sommer's Duplex Metal Key 40%
John Sommer's Diamond Lock 40%
John Sommer's I.X.L. Cork Lined 50%
John Sommer's Reliable Cork Lined .. 50&10%
John Sommer's Chicago Cork Lined 60%
John Sommer's O. K. Cork Lined 50%
John Sommer's No Brand, Cedar 50%
John Sommer's Perfection, Cedar 40%
McKenna, Brass:
Burglar Proof, N. P. 25%
Improved, ⅝ and ¾ inch 25%
Self Measuring:
Enterprise, ℔ doz. $36.00 ..... 40&10%
Lane's, ℔ doz. $36.00 ..... 40&10%
National Measuring, ℔ doz. $36.40&10%

Felloe Plates—
See *Plates, Felloe.*

Files— Domestic—
List Nov. 1, 1899.
Best Brands ..... *70&10@75&10%*
Standard Brands ..... *75&10@75&10&10%*
Lower Grade ..... *75&10&10@80&10%*

Imported—
Stubs' Tapers, Stubs' list, July 24, '97 ..... *33 1-3@40%*

Fixtures, Fire Door—
Richards Mfg. Co.:
Universal, No. 103; Special, No. 104 ..... $3.75
Fusible Links, No. 96 ..... 50%
Expansion Bolts, No. 107 ..... 60&10%

Grindstone—
Net Prices:

Inch	*15*	*17*	*19*	*21*
Per doz.	*$3.25*	*3.75*	*4.25*	*4.75*

P., S. & W. Co. ..... 30&10%
Reading Hardware Co. 60%
Stowell's Giant Grindstone Hanger .. ℔ doz. $6.00
Stowell's Grindstone Fixtures, Extra Heavy, 40&10%; Light 50%

Fodder Squeezers—
See *Compressors.*

Forks—
NOTE.—Manufacturers are selling from the list of September 1, 1904, but many jobbers are still using list of August 1, 1899, or selling at net prices.
Iowa Dig-Ezy Potato ..... 60&10%
Victor, Hay ..... 60&15&2½%
Victor, Manure 60%
Victor, Reader 65%
Champion, Hay 66⅔%
Champion, Reader 65%
Champion, Manure ..... 60&15&2½%
Columbia, Hay ..... 60&20%
Columbia, Manure 70%
Columbia, Spading ..... 70&12½%
Hawkeye Wood Barley 40%
W. & C. Potato Digger ..... 60&10%
Acme Hay ..... 60&20%
Acme Manure, 4 tine ..... 60&10&5%
Dakota Reader ..... 60&20%
Jackson Steel Barley ..... 60&20%
Kansas Reader 65%
W. & C. Favorite Wood Barley 40%
Plated.—See Spoons.

Frames— Saw—
White, S'g't Bar, per doz. ..... *75@80¢*
Red, S'g't Bar, per doz. ..... *$1.00@1.25*
Red, Dbl. Brace, per doz. ..... *$1.40@1.50*

Freezers, Ice Cream—

Qt.	*1*	*2*	*3*	*4*	*6*
Each	*$1.30*	*$1.60*	*$1.90*	*$2.20*	*$2.80*

Fruit and Jelly Presses—
See *Presses, Fruit and Jelly.*

Fry Pans—See *Pans, Fry.*

Fuse— *Per 1000 Feet.*
Hemp ..... *$2.75* } 10&8½%
Cotton ..... *3.20* }
Waterproof Sgl. Taped .. *3.65* }
Waterproof Dbl. Taped .. *4.40* }
Waterproof Tpl. Taped .. *5.15* }

Gates, Molasses and Oil—
Stebbins' Pattern ..... 80&10%

Gauges—
Marking, Mortise, &c. ..... *50&50&10%*
Chapin-Stephens Co.:
Marking, Mortise, &c. ..... 50&50&10%
Disston's Marking, Mortise, &c. 67½%
Stanley R. & L. Co.'s Butt and Rabbet Gauge 35%
Marking and Mortise 55%
Wire, Brown & Sharpe's 33⅓%
Wire, Morse's 25%
Wire, P. S. & W. Co. 30%

Gimlets— Single Cut—
Numbered assortments, per gro.
Nail, Metal, No. 1, ... *$2.00; 2, $2.30*
Spike, Metal, No. 1, ... *$4.00; 2, $5.00*
Nail, Wood Handled, No. 1, ... *$2.30; 2, $2.60*
Spike, Wood Handled, No. 1, ... *$4.00; 2, $5.00*

Glass, American Window
See *Trade Report.*

Glasses, Level—
Chapin-Stephens Co. ..... 65@65&10%

Glue, Liquid Fish—
Bottles or Cans, with Brush .. *25&10@50%*
International Glue Co. (Martin's) .. 40%

Grease, Axle—
Common Grade ..... *gro. $4.50@6.00*
Dixon's Everlasting, 10-lb pails, ea. 85¢; in boxes, ℔ doz., 1 lb. $1.20; 2 lb. $2.00
Helmet Hard Oil 25%

Griddles, Soapstone—
Pike Mfg. Co. ..... 33⅓@33⅓&10%

Grindstones—
Pike Mfg. Co.:
Improved Family Grindstones, ℔ inch, ℔ doz., $2.00 ..... 33⅓%
Royal Mfg. Co.:
Alundum Grinding Machines, each, Nos. 01, $1.75; 1A, $2.50; 10, $5.00 ..... 30%
Alundum Sickle Grinders, each, Nos. 20A, $6.00; 20A Combined, $6.50 ..... 30%
Alundum Disc Grinders, each, $2.50 ..... 30%

Grips, Nipple—
Perfect Nipple Grips ..... 40&10&2%

Halters and Ties—
Cow Ties ..... *60&5@60&10%*
Covert Mfg. Co.:
Web ..... 30&2%
Jute Rope 35%
Sisal Rope 20%
Cotton Rope 45%
Hemp Rope 45%
Oneida Community:
Am. Coil and Halters ..... 40@40&5%
Am. Cow Ties ..... 45@50%
Niagara Coil and Halters .. 45@50&5%
Niagara Cow Ties .. 45&5@50&10&5%

Hammers—
Handled Hammers—
Heller's Machinists' .. 55&10@55&10&5%
Heller's Farriers' ..... 40&5@40&10&5%
Magnetic Tack, Nos. 1, 2, 3, $1.25, $1.50, $1.75 ..... 50%
Peck, Stow & Wilcox, Steel 50%
Fayette R. Plumb:
A. E. Nail ..... 40&2½@40&12½%
Eng. and B. S. Hand .. 50&12½@60%
Machinists' Hammers .. 50&15@60&5%
Rivet and Tinners' .. 40&2½@40&12½%
Vaughan & Bushnell Mfg. Co.:
A. E. Nail ..... 40&2½@40&12½%
Machinists' ..... 50&15@60&5%

Heavy Hammers and Sledges—
Under 3 lb., per lb., 50¢ ..... *80&5@..%*
3 to 5 lb., per lb., 40¢ ..... *80&5@..%*
Over 5 lb., per lb., 30¢ ..... *80&10&5@..%*
Wilkinson's Smiths' .. lb. *9½@10¢*

Handles—
Agricultural Tool Handles
Axe, Pick, &c. ..... *60&10@60&10&5%*
Hoe, Rake, &c. ..... *40@45&5%*
Fork, Shovel, Spade, &c.:
Long Handles ..... *40@45&5%*
D Handles *40%*
Cross-Cut Saw Handles—
Atkins 40%
Champion 50%
Disston's 50%
Mechanics' Tool Handles—
Auger, assorted ..... *gro. $2.50@$3.00*
Brad Awl ..... *gro. $1.65@$1.75*
Chisel Handles, Ass'd, per gro.:
Tanged Firmer, Apple, $2.40@$2.65; Hickory ..... *$2.15@2.40*
Socket Firming, Apple, $1.75@$1.95; Hickory ..... *$1.45@$1.60*
Socket Framing, Hickory, $1.60@$1.75
File, assorted ..... *gro. $1.30@$1.40*
Hammer, Hatchet, &c. ..... *60&10@60&10&5%*
Hand Saw, Varnished, doz. 80&85¢; Not Varnished ..... *65@75¢*
Plane Handles:
Jack, doz. 80¢ Jack, Bolted 75¢
Fore, doz. 45¢ Fore, Bolted 90¢
Chapin-Stephens Co.:
Carving Tool ..... 40@40&10%
Chisel ..... 65@65&10%
File and Awl ..... 65@65&10%
Saw and Plane ..... 40@40&10%
Screw Driver ..... 40@40&10%
Millers Falls Adj. and Ratchet Auger Handles ..... 20&10%
Nicholson Simplicity File Handle .. ℔ gro. $0.85@$1.50
W. A. Zelnicker Supply Co.:
Hammer, per doz., 12 in., $2.00; 14 in., $2.00; 16 in., $2.30; 18 in., $2.50; 20 in., $2.70; 22 in., $3.00; 24 in., $3.30; 26 in., $3.50; 30 in., $3.80.
Sledge, per doz., oval 30 in., $3.80; octagon, 30 in., $3.80; oval, 36 in., $4.00; octagon, 36 in., $4.00.
Axe, per doz., 28 to 34 in., $5.60; 36 in., $5.80.
Adze, per doz., 36 in., $5.80; 36 in., $7.80.
Pick, per doz., R. R., 36 in., $8.00; coal, 34 in., $5.80.
Hatchet, per doz., 12 to 14 in., $2.00.

Hangers—
NOTE.—Barn Door Hangers are generally quoted per pair, without track, and Parlor Door Hangers per double set with track, &c.
Allith Mfg. Co.:
Reliable, No. 1: Allith, No. 3: Allith Adjustable, No. 6: Reliable Parlor Door 50%
Chicago Spring Butt Co.:
Friction 25%
Oscillating 25%
Big Twin 25%
Chisholm & Moore Mfg. Co.:
Baggage Car Door 50%
Elevator 30%
Railroad 50%
Cronk & Carrier Mfg. Co.:
Loose Axle ..... 60&10%
Roller Bearing 70%
Griffin Mfg. Co.:
Solid Axle, No. 10, $12.00 ..... 70%
Roller Bearing, No. 11, $15.00 .. 70%
Roller Bearing, Ex. Hy., No. 22, $18.00 ..... 70%
Hinged Hangers, $16.00 .. 60&10%
Lane Bros. Co.:
Parlor, Ball Bearing, $4.00; Standard, $3.15; No. 105, $2.85; New Model, $2.80; New Champion $2.25
Barn Door, Standard .. 60&5%
Hinged ..... net $6.00
Covered ..... 60&2%
Special ..... 70&5%
Lawrence Bros.:
Advance and Sterling .. 60&2½%
Cleveland and Peerless .. 70&7½%
Clipper, No. 75 ..... 60&5%
Crown ..... 60&2½%
Cyclone-Tandem ..... net $7.50
Easy Parlor Door, Dbl. Sets, $2.50; Single Sets, $1.25 ..... 60 65
Giant 60%
Hummer ..... 70&7½%
New Cyclone, Flexible, $16.00 60%
New York ..... 60&2½%
McKinney Mfg. Co.:
No. 1, Special, $15 ..... 60&10%
No. 2, Standard, $18 ..... 60&10%
Hinged Hanger, $16 ..... 50%
Meyers' Stayon Hangers .. 60&5%
Richards Mfg. Co.:
Hangers, Nos. 47, 48, 147, 247, 60&5%
Pioneer Wood Track, No. 3 .. $2.25
Roller B'r'g St'l Track No. 12 $2.20
Roller B'r'g St'l Track No. 13 $2.50
Roller B'r'g, Nos. 39, 41, 43, 70&7½%
Hero, Adj. Track No. 19 .. 50&10%
Adjustable Track Tandem Trolley Track No. 16 ..... 50&10%
Seal, Steel Track No. 8 ..... $2.25
Auto Adj. Track No. 22 .. 50&5%
Trolley B. D. No. 17, $1.25; P. D. No. 120, $2.25; No. 121, $2.45; No. 150 ..... $2.50
Safety Underwriters F. D. No. 101 ..... 50%
Tandem No. 44, 2½ and 3 .. 60&10%
Palace, Adjustable Track No. 132 ..... 50&5%
Royal, Adjustable Track No. 122 ..... 50&10%
Ives' Wood Track No. 1 ..... $2.25
Trolley B. D. No. 20 ..... 50&10%
Trolley B. D. No. 24, $1.30; No. 27, $1.40; No. 28 ..... $1.60
Roller Bearings, Nos. 37, 38, 39, 41, 43, 44, Sizes 1 and 2 .. 70&7½%
Anti-friction, No. 42; No. 44, sizes 2½ and 3 ..... 60%
Hinged Tandem No. 48 .. 60&5%
Folding Door B. B. Swivel No. 135 ..... 40%
Stowell Mfg. & Foundry Co.:
Acme Parlor Ball Bearing .. 30%
Ajax Hinge Door 60%
Apex Parlor Door ..... 50&10&5%
Atlas 60%
Baggage Car Door 50%
Climax Anti-Friction 50%
Elevator 40%
Express 50%
Lundy Parlor Door 50%
Matchless 80%
Nansen 70%
Parlor Door, 50&10%; Railroad, 50&10%
Steel, Nos. 300, 404, 500 ..... 50%
Underwriters' Fire Door 40%
Wild West Warehouse Door .. 50%
Wilbern, No. 6, net, ℔ doz. $9.00
Zenith for Wood Track 50%
A. L. Sweet Iron Works:
Check Back, 70%; Eagle 70%
Climax Anti-Friction ..... 50&10%
Hylo Hinge, New Perfection, Pilot, Pilot Hinge 60%
Rider Wooster 65%
Western Pattern 70%
Taylor & Boggis F'y Co.'s Kidder's Roller Bearing .. 50&15&10&5%

Hangers— Garment—
Pullman Trouser, ℔ gro., 1 pair Flat Aluminoy, $9.00; 1 pair Round Nickeled, $9.00; 4 pair Round Nickeled, $27.00; 1 pair Flat Gun Metal, $12.00; 1 pair Flat Black Enameled, $7.50; 1 pair Wood Clamp, $13.50; Skirt Hangers, Folding, per gro., $21.00; Coat Hangers, Folding, per gro., $9.00; Garment Hanger Rods, Round Nickeled, per gro., $10.50; Garment Hanger Loops, Round Nickeled, per gro. $10.50
Victor Folding ..... ℔ gro. $9.00
Western, W. G. Co. ..... 75&10%

Gate—
Myers' Patent Gate Hangers, ℔ doz. net $4.50

Joist and Timber—
Lane Bros. Co. 30%

Hasps—
Griffin's Security Hasp ..... 50&10%
McKinney's Perfect Hasp, ℔ doz. .. 50%

Hatchets—
Regular list, first qual. ..... *40&7½@—*
Second quality ..... *50&10@—*

Heaters, Carriage—
Clark, No. 5, $1.75; No. 5D, $2.00; No. 3, $2.25; No. 3D, $2.75; No. 7D, $3.00; No. 3E, $3.25; No. 1, $3.50 ..... 25%
Clark Coal, ℔ doz., $0.75 ..... 20%

Hinges—
Blind and Shutter Hinges—
Surface Gravity Locking Blind: (Victor; National; 1868 O. P.; Niagara; Clark's O. P.; Clark's Tip; Buffalo.)

No.	*1*	*1½*	*2*	*2½*
Doz. pair	*$0.70*	*.65*	*.60*	*.55*

Mortise Shutter: (L. & P., O. S., Dixie, &c.)

No.	*1*	*1½*	*2*	*2½*
Doz. pair	*$0.70*	*.65*	*.60*	*.55*

Mortise Reversible Shutter (Buffalo, &c.):

No.	*1*	*1½*	*2*
Doz. pair	*$0.70*	*.65*	*.60*

North's Automatic Blind Fixtures, No. 2, for Wood, $9.00; No. 3, for Brick, $11.50 ..... 10%
Charles Parker Co. ..... 70@75%
Parker Wire Goods Co.:
Hale & Benjamin Automatic Blind Hinges 20%
Hale's Blind Awning Hinges, No. 110, for wood, $9.00; No. 111, for brick, $9.00 ..... 20%
Reading's Gravity 60%
Stanley's Steel Gravity Blind Hinges, No. 1647½, ℔ doz. sets, without screws, $0.95; with screws, $1.25.
Wrightsville Hardware Co.:
O. S., Lull & Porter ..... 70&10&2½%
Acme, Lull & Porter ..... 70&5&2½%
Queen City Reversible ..... 70&5&2½%
Shepard's Noiseless, Nos. 60 65, 85 ..... 70&10&2½%
Niagara, Gravity Locking, Nos. 1, 3 & 5 ..... 10&10&2½%
1868, Old Pat'n, No. 1 ..... 75%
Nos. 3 & 5 ..... 70&10&2½%
Tip Pat'n, No. 1 ..... 75%
No. 3 ..... 70&10&2½%
Buffalo Gravity Locking, Nos. 1, 3 & 5 ..... 70&5%
Shepard's Double Locking .. 70&5&2½%
Champion Gravity Locking .. 70&10&2½%
Pioneer 75%
Empire 60%
W. H. Co.'s Mortise Gravity Locking, No. 2 ..... 60%

Gate Hinges—
Clark's or Shepard's—Doz. sets:

No.	*1*	*2*	*3*
Hinges with L't'chs.	*$2.00*	*2.70*	*5.00*
Hinges only	*1.40*	*2.05*	*3.80*
Latches only	*.70*	*.70*	*.35*

New England:
With Latch ..... *doz. ...@$2.00*
Without Latch ..... *doz. ...@$1.60*
Reversible Self-Closing:
With Latch ..... *doz. ...@$1.75*
Without Latch ..... *doz. ...@$1.35*
Western:
With Latch ..... *doz. $1.75*
Without Latch ..... *doz. $1.15*
Wrightsville Hardware Co.:
Shepard's or Clark's Hinges and Latches, Hinges only or Latches only, Nos. 1, 2 or 3 ..... 65&5%

Pivot Hinges
Bommer Bros. Pivot 40%
Lawson Mfg. Co. Matchless 50%

Spring Hinges—
Holdback, Cast Iron ..... *$6.50@$7.00*
Non-Holdback, Cast Iron ..... *$6.25@$6.75*
J. Bardsley:
Bardsley's Non-Checking Mortise Floor Hinges 40%
Bardsley's Patent Checking .. 33⅓%
Bommer Bros.:
Bommer Ball Bearing Floor .. 40%
Bommer Spring Hinges 10%
No. 999 Wrot, Steel Hold Back, ℔ gr. $9.00
Chicago Spring Butt Co.:
Chicago Spring Hinges 25%
Triple End Spring Hinges .. 50%
Chicago (Ball Bearing) Floor .. 50%
Garden City Engine House .. 25%
Keene's Saloon Door 25%
Columbian Hardware Co.:
Acme, Wrought Steel 30%
Acme, Brass 25%
American 30%
Columbia, ℔ gr., No. 14, $9.00; No. 18, $25.00
Columbia, Adj., No. 7, ℔ gr. $12.00
Columbian Hinges ..... 60&10%
Gem, new list 30%
Clover Leaf ..... ℔ gr. $12.00
Oxford, new list 30%
Floor Spring Hinges ..... 65&10%
Lawson Mfg. Co. Matchless .. 30%
Richards Mfg. Co.:
Superior Double Acting Floor Hinges 40%
Shelby Spring Hinge Co.:
Buckeye All Steel Holdback Screen Door ..... ℔ gr. $9.00
Chief Ball Bearing Floor Hinge 50%
Ball Bearing Door 25%
No. 777, Sheet Steel Holdb'k, ℔ gr. pr. $9.00
Superior Spring Hinge Co.:
Superior Floor Hinges 33⅓%
The Stover Mfg. Co.:
Ideal, No. 16, Detachable, ℔ gr. $12.50
Ideal, No. 4 ..... ℔ gr. $9.00
New Idea, No. 1 ..... ℔ gr. $9.00
New Idea, Double Acting .. 50%
New Idea Floor 50%

Extra 5&10% often given.

Extra 10% often given on most of these Hinges.

Wrought Iron Hinges—
Strap and T Hinges, &c., list December 20, 1904:
Light Strap Hinges ..... *60%* } Extra 10&10@
Heavy Strap Hinges ..... *65%* }
Light T Hinges ..... *55%* }
Heavy T Hinges ..... *45%* }
Extra Heavy T Hinges .. *60%* }
Hinge Hasps ..... *40%* }
Cor. Heavy Strap ..... *65%* }
Cor. Ex. Heavy T ..... *60%* }

Screw Hook and Strap. { *6 to 12 in.* .. *lb. 3½¢* / *1½ to 20 in.* .. *lb. 3½¢* / *22 to 36 in.* .. *lb. 3½¢*

Screw Hook and Eye:
¾ to 1 inch ..... *lb. 6½¢*
⅝-inch ..... *lb. 7½¢*
½-inch ..... *lb. 8½¢*

Hitchers, Stall—
Covert Mfg. Co., Stall Hitchers..30&2%

Hods— Coal—
M'f'gr's list, price per gross.

Inch	*15*	*16*	*17*	*18*	
Galv. Open	*$35*	*$39*	*$42*	*$46*	*10&5%*
Jap. Open	*26*	*28*	*31*	*35*	
Galv. Funnel	*43*	*48*	*52*	*56*	
Jap. Funnel	*33*	*36*	*39*	*43*	

Masons' Etc.—
Cleveland Wire Spring Co.:
Steel Brick, No. 162.....each $1.05
Steel Mortar, No. 158.....each $1.35

Hoes— Eye—
Scovil and Oval Pattern.....
60&10@60&10&10%
Grub, list Feb. 23, 1899.....
70&10@75&10%
D. & H. Scovil.....30%

Handled—
NOTE.—Manufacturers are selling from the list of September 1, 1904, but many jobbers are still using list of August 1, 1899, or selling at net prices.
Cronk's Weeding, No. 1, $2.75; No. 2, $2.50
Star Double Bit.....$3.20
Ft. Madison Cotton Hoe....70&10&10%
Ft. Madison Crescent Cultivator Hoe, ₱ doz.....70&10%
Ft. Madison Mattock Hoes:
Regular Weight.....₱ doz. 66⅔%
Junior Size.....₱ doz. $4.00
Ft. Madison Sprouting Hoe..₱ doz. 50%
Ft. Madison Dixie Tobacco Hoe.....
75&10&7½%
Kretsinger's Cut Easy.....70&10%
Warren Hoe.....45&10%
W. & C. Ivanhoe.....75&2%
B. B. 6 in., Cultivator Hoe.....$3.15
B. B., 6½ in.....$3.35
Acme Wedding.....₱ doz., net, $4.35
W. & C. L'tning Shuffle Hoe, ₱ doz. $4.85

Hoisting Apparatus—
See *Machines, Hoisting.*

Holders— Bit—
Angular, ₱ doz. $24.00.....45&10%

Door—
Bardsley's, Iron, 40%; Brass and Bronze.....33⅓%
Empire.....50%
Pullman.....35%
Superior.....33⅓%

File and Tool—
Nicholson File Holders and File Handles.....33⅓&40%

Fruit Jar—
Triumph Fruit Jar Holder, ₱ gross, $10.80; ₱ doz.....$1.25

Trace and Rein—
Fernald Double Trace Holder, ₱ doz. pairs.....$1.25
Dash Rein Holder, ₱ doz. pairs..$1.25

Hones—Razor—
Pike Mfg. Co., Belgian, German and Swaty.....50%

Hooks—Cast Iron—
Bird Cage, Reading.....40%
Clothes Line, Reading List.....40%
Clothes Line, Stowell's.....70%
Coat and Hat, Reading.....45&20%
Coat and Hat, Stowell's.....70%
Coat and Hat, Wrightsville.....65%
Harness, Reading List.....40%
Harness, Stowell's.....60%
School House, Stowell's.....70%

Wire—
Belt.....80%
Wire C. & H. Hooks:.....
75@75&10%
Columbian Hdw. Co., Gem.....70&5%
Parker Wire Goods Co., King..70&10%
Western W. G. Co. Molding.....75%
Wire Goods Co.:
Acme, 60&10%; Chief, 70%; Crown, 75%; Czar, 65%; V Brace, 75%; Czar Harness, 50&10%.

Wrought Iron—
Box, 6 in., per doz., $1.00; 8 in., $1.25; 10 in., $3.50.
Cotton.....doz. $1.05@$1.25
Wrought Staples, Hooks, &c.—
See Wrought Goods.

Miscellaneous—
Hooks, Bench, see *Stops, Bench.*
Bush, Light, doz. $4.75; Medium, $5.35; Heavy, $6.25
Grass, best, all sizes, per doz.$1.60
Grass, common grades, all sizes, per doz.....$1.30
Whiffletree.....lb. 5¾@6¢
Hooks and Eyes:
Brass.....60&5@60&10&5%
Malleable Iron.....70@70&10%
Covert Mfg. Co. Gate and Scuttle Hooks.....40%
Ft. Madison Cut-Easy Corn Hooks, ₱ doz. $3.25 net
Turner & Stanton Co. Cup and Shoulder.....80&10&10%
Bench Hooks—See Bench Stops.
Corn Hooks—See Knives, Corn.

Horse Nails—
See *Nails, Horse.*

Horseshoes—
See *Shoes, Horses.*

Hose, Rubber—
Garden Hose, ¾-inch:
Competition.....ft. 5 @ 6 ¢
3-ply Guaranteed..ft. 8 @ 9 ¢
4-ply Guaranteed..ft. 10 @11 ¢
Cotton Garden, ¾-in., coupled:
Low Grade.....ft. 8 @ 9 ¢
Fair Quality.....ft. 10 @11 ¢

Irons— Sad—
From 1 to 10.....lb. 3 @3¼¢
B. B. Sad Irons.....lb. 3¼@3½¢
Mrs. Potts', cents per set:

Nos.	*50*	*55*	*60*	*65*
Jap'd Tops	*80*	*77*	*90*	*99*
Tin'd Tops	*85*	*88*	*95*	*99*

New England Pressing..lb. 3¾@4¢

Pinking—
Pinking Irons.....doz. 60¢

Irons, Soldering
See *Coppers.*

Jacks, Wagon—
Covert Mfg. Co.:
Auto Screw.....30&2%; Steel, 45%
Lockport.....50%
Lane's Steel.....30&10&2%
Richards' Tiger Steel, No. 130...50&10%
Smith & Hemenway Co.'s.....25%

Kettles—
Brass, Spun, Plain.....30@25%
Enameled and Cast Iron—See Ware, Hollow.

Knives—

Butcher, Kitchen, &c.—
Foster Bros.' Butcher, &c.....30%
Wilkinson Shear & Cutlery Co.....60%

Corn—
Wilkinson Shear & Cutlery Co., Wilcut Brand Knives and Hooks.60%
Withington Acme, ₱ doz. $2.65; Dent, $2.75; Adj. Serrated, $2.20; Serrated, $2.10; Yankee No. 1, $1.50; Yankee No. 2, $1.15.

Drawing—
Standard List.....75&5@75&10%
C. E. Jennings & Co., Nos. 45, 46...60%
Jennings & Griffin, Nos. 41, 42....75%
Swan's.....66⅔@70%
Watrous.....16⅔%
L. & I. J. White.....20&5@25%

Hay and Straw—
Serrated Edge, per doz. $5.50@5.75
Iwan's Sickle Edge.....₱ doz. $9.50
Iwan's Serrated.....₱ doz. $10.00

Mincing—
Buffalo.....₱ gro. $13.00

Miscellaneous—
Farriers'.....doz. $3.00@3.25
Wostenholm's.....₱ doz. $3.00@3.25

Knobs—
Base, 2½-inch, Birch, or Maple, Rubber Tip....gro. $1.25@$1.40
Carriage, Jap., all sizes.....
gro. 40@45¢
Door, Mineral.....doz. 65@70¢
Door, Por. Jap'd.....doz. 70@75¢
Door, Por. Nickel..doz. $2.05@2.15
Bardsley's Wood Door, Shutters, &c.15%

Lacing, Leather—
See *Belting, Leather—*

Ladders, Store, &c.—
Allith Mfg. Co., Reliable.....50%
Lane's Store.....25%
Myers' Noiseless Store Ladders....50%
Richards Mfg. Co.:
Improved Noiseless, No. 112.....50%
Climax Shelf, No. 113.....50%
Trolley, No. 109.....50%

Ladles, Melting—
L. & G. Mfg. Co. (low list).....25%
P. S. & W.....40&10%
Reading.....60%

Lanterns—Tubular—
Regular Tubular, No. 0.....
doz. $4.25@4.50
Lift Tubular, No. 0.....
doz. $4.75@5.00
Hinge Tubular, No. 0.....
doz. $4.75@5.00
Other Styles.....40@40&5%

Bull's Eye Police—
No. 1, 2¾-inch.....$2.75@3.00
No. 2, 3-inch.....$3.00@3.25

Lasts and Stands, Shoe—
Stowell's Atlas, Malleable Iron.....50%
Stowell's Badger, Cast Iron.....50%

Latches— Thumb—
Roggin's Latches, with screw..
doz. 35@40¢

Door—
Allith Mfg. Co., Automatic, No. 400, ₱ doz.....$4.00
Cronk & Carrier Mfg. Co., No. 101, ₱ doz. $2.20
Cronk & Carrier Mfg. Co., Latch, Hasp and Staples.....50%
Richards' Bull Dog, Heavy, No. 125.....50&5%
Richards' Trump, No. 127.....$1.50
Stowell's Steel.....50%

Leaders, Cattle—
Small.....doz. 50¢; large, 60¢
Covert Mfg. Co.:
Cotton, 45%; Hemp, 45%; Jute, 35%; Sisal, 20%.

Lifters, Transom—
R. & E.....10%

Lines—
Wire Clothes, Nos. 18 19 20
100 feet.....$2.25 2.00 1.75
75 feet.....$1.75 1.55 1.10
Anniston Waterproof Clothes, 50 ft., ₱ gro., $25.00; Gilt Edge, $23.00; Air Line, $23.00; Acme, $18.00; Alabama, $17.00; Empire, $16.00; Advance, $14.00; Eclipse, $13.50; Chicago, $11.50; Standard, $10.50; Columbia, $9.50; Allston, $13.50; Calhoun, $12.00.
Samson Cordage Works:
Solid Braided Chalk, Nos. 0 to 3..40%
Solid Braided Masons'.....30%
Silver Lake Braided Chalk, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50.....₱ gr. 20%
Masons' Lines, Shade Cord, &c.:
White Cotton, No. 3½, $1.50; No. 4, $2.00; No. 4½, $2.50; Colors, No. 3½, $1.75; No. 4, $2.25; No. 4½, $2.75; Linen, No. 3½, $2.50; No. 4, $3.50; No. 4½, $4.50.....20%
Tent and Awning Lines: No. 5, White Cotton, $7.50; Drab Cotton, $8.50.....20%
Clothes Lines, White Cotton: 50 ft., $2.75; 60 ft., $3.25; 70 ft., $3.75; 75 ft., $4.00; 80 ft., $4.25; 90 ft., $4.75; 100 ft., $5.25.....25%
Turner & Stanton Co.:
Solid Braided Chalk, Masons' and Awning Lines.....40%
Clothes Lines White Cotton.....20%
Shade Cord, Cotton or Linen.....20%

Locks— Cabinet—
Cabinet Locks.....33⅓%

Door Locks, Latches, &c.—
NOTE.—Net Prices are very often made on these goods.
Reading Hardware Co.....40%
R. & E. Mfg. Co.....10%

Elevator—
Stowell's.....50%

Padlocks—
R. & E. Mfg. Co. Wrought Steel and Brass.....75&10%

Sash, &c.—
Ives' Patent:
Bronze and Brass, 60%; Crescent, 40&20%; Iron, 60%; Window Ventilating, 55%; Robinson Pat. Ventilating Sash Lock, 33⅓%; Wrought Bronze and Brass, 55%; Wrought Steel, 55%.
Pullman Patent Ventilating Lock..35%
Reading.....40%

Machines—Boring—
Com. Up'r't, without Augers.
$2.00@2.25
Com. Angl'r, without Augers,
$2.25@2.50
Swan's Improved.....40&10%
Jennings', Nos. 1 and 4.....33⅓%
Millers' Falls.....5.75
Snell's, Upright, $2.65; Angular, $2.90

Corking—
Reisinger Invincible Hand Power.....
₱ doz. $18.00

Fence—
Williams' Fence Machines....each, $5.50

Hoisting—
Moore's Anti-Friction Chain Hoist.30%
Moore's Hand Hoist, with Lock Brake.....20%
Moore's Cyclone High Speed Chain Hoist.....25%

Ice Cutting—
Chandler's.....12½%

Washing

Boss Washing Machine Co.:	Per doz.
Boss No. 1	$57.00
Boss Rotary	$57.00
Champion Rotary Banner No. 1	$57.00
Standard Champion No. 1	$50.00
Standard Perfection	$27.00
Cincinnati Square Western	$33.00
Uneeda American, Round	$33.60

Mallets—
Hickory.....45&5@50%
Lignumvitæ.....45&5@50%
Tinners' Hickory and Apple-wood.....doz. 45&5@50%

Mangers, Stable—
Swett Iron Works.....50%

Mashers, Vegetable—
Western, W. G. Co., Potato....60&10%

Mats, Door—
Elastic Steel (W. G. Co.), new list.50%
Keystone Wire Matting Co.:
Keystone.....50%
Ideal.....50%

Mattocks—
See *Picks and Mattocks.*

Milk Cans—See *Cans, Milk.*

Mills, Coffee, &c.—
Enterprise Mfg. Co.....20@25%
National list Jan. 1, 1902.....30%
Parker's Columbia & Victoria.50&10@60%
Parker's Box and Side.....50&10@60%
Swift, Lane Bros. Co.....30%

Motors, Water—
Divine's Red Devil.....30%

Mowers, Lawn—
NOTE.—Net prices are generally quoted
Cheapest.....all sizes, $1.85@2.00
Cheap.....all sizes, $2.00@2.50
Better Grade..all sizes, $2.50@4.50

	12	*14*	*16*	*18-in.*
High Grade	*$4.50*	*4.75*	*5.00*	*5.25*

Continental.....60%
Great American.....70%
Great American Ball B'r'g, new list.70%
Quaker City.....70%
Pennsylvania.....60%
Pennsylvania, Jr., Ball Bearing, 50&10&5%
Pennsylvania Golf.....60%
Pennsylvania Horse.....33⅓&5%
Pennsylvania Pony.....40&5%
Granite State:
Style A, Low Wheel.....70&10&10%
Style B, Low Wheel.....70&10%
Style C, High Wheel, spcl. disct., 70&10%
Style D, High Wheel, spcl, disct.70%
Philadelphia:
Styles M., S., C., K., T....70&10&5%
Style A, all Steel.....60&10&5%
Style E, High Wheel.....70&10&5%
Drexel and Gold Coin, special list.40%
Horse.....40&5%
Pony.....40&5%
36-in. Horse.....30&10%
Eagle Horse.....30&5%
I. X. L. Horse.....50%

Nails—
Wire Nails and Brads, Miscellaneous.....87½@87½&10%
Cut and Wire. See *Trade Report.*
Hungarian, Finishing, Upholsterers' &c. See *Tacks.*

Horse—

Nos.	6	7	8	9	10	
Anchor	23	21	20	19	18	..40&5%
Champlain	28	26	25	24	23	.....50%
Coleman	13	12	12	11	11	.....net
New Haven	23	21	20	19	18	..40&5%
Livingston	19	18	17	16	16	.....10%

Western.....₱ lb 3½¢
Jobbers' Special Brands.....
per lb. 9@10¢

Picture—

Pic.	*2*	*2½*	*3*	*in.*
Brass H'd.	*.55*	*.60*	*.70*	*.. gro*
Por. Head	*1.10*	*1.10*	*1.10*	*.. gro*

Nippers—
See *Pliers and Nippers.*

Nuts—
Cold Punched: Off list.
Square, Blank or Tapped..4.80¢
Hexagon, Blank or Tapped..5.10¢
Square, B'k, C., T. & R...5.10¢
Hexagon, B'k, C., T. & R..5.70¢
Hot Pressed:
Square, Blank.....5.00¢
Hexagon, Blank.....5.40¢
Square, Tapped.....4.70¢
Hexagon, Tapped.....5.10¢

Oakum—
Best.....lb., 6½¢
U. S. Navy.....lb., 6¢
Navy.....lb., 5¢
Plumbers' Spun Oakum.....3¾¢
In carload lots ½¢ lb. off, f.o.b. New York.

Oil Tanks—See *Tanks, Oil.*

Oilers—
Brass and Copper.....50&10%
Tin or Steel.....65&10&5%
Zinc.....65&10&5%
Chase or Paragon:
Brass and Copper.....50&10%
Tin or Steel.....65&10%
Zinc.....65&10%
Malleable, Hammers' Improved, Nos. 11, 12 and 13, 20%; Old Pattern, Nos. 1, 2, 3, 50%.
American Tube & Stamping Co.:
Spring Bottom Cans.....70@70&10%
Railroad Oilers, &c.....60@60&10%

Openers— Can— *Per doz.*
Sprague, Iron Handle....30@35¢
Sprague, Wood Handle...35@40¢
Sardine Scissors.....$1.75@$3.00
Vim Tin Shear and Can Opener, ₱ doz., 75c.; per gro., $7.50
Yankee Can and Bottle Opener, ₱ doz., net.....$0.75

Egg—
Nickel Plate, ₱ doz., $2.90; Silver Plate, $4.00.

Packing—
Asbestos Packing, Wick and Rope.....20@25¢

Rubber—
(*Fair quality goods.*)
Sheet, C. I.....11@12¢
Sheet, C. O. S.....11@12¢
Sheet, C. B. S.....12@13¢
Sheet, Pure Gum.....40@45¢
Sheet, Red.....40@50¢
Jenkins' '96, ₱ lb. 80¢.....25%

Miscellaneous—
American Packing...lb. 7@10 ¢
Cotton Packing.....lb. 16@25 ¢
Italian Packing.....lb. 9@12½¢
Jute.....lb. 4@ 4½¢
Russia Packing.....lb. 8@11 ¢

Pails, Creamery—
R. M. Co., with gauges, ₱ doz., No. 1, $6.25; No. 2, $6.50.

Pails, Water, Well, &c.—
See *Buckets.*

Pans— Dripping—
Standard List.....70&10@75%
Edwards, Royal Blue.....65&7½%

Fry—
Common Lipped:

Nos.	*1*	*2*	*3*	*4*	*5*
Per doz	*$0.75*	*0.80*	*0.90*	*1.10*	*1.30*

Refrigerator, Galva.—

Inch	*12*	*14*	*16*	*18*
Per doz	*$1.75*	*2.25*	*2.80*	*3.15*

Roasting and Baking—
Regal, R. M. Co., ₱ doz., Nos. 5, $1.50; 10, $5.25; 20, $5.75; 30, $6.25.
Savory, ₱ doz., net, Nos. 200, $9.00; 400, $15.00.
Simplex, ₱ gro.:

No.	40	50	60	140	150	160
	$30.00	35.00	42.00	34.00	39.00	46.00

Paper—Building Paper
Asbestos: lb.
Roll Board or Building Felt, 6 to 30 lb., per 100 sq. ft.3½to5¢
Roll Board or Building Felt, 3-32 and ⅛ in., 45 to 60 lb., per 100 sq. ft.....6¢
Mill Board, Sheet, 40 x 40 in., 1-32 to ½ in.....3@5¢
Per roll
Rosin Sized Sheathing: 500 sq. ft. Light weight, 25 lbs. to roll 40@50¢
Medium weight, 30 lbs. to roll, 50@55¢
Heavy weight, 40 lbs. to roll. 65@70¢
Black Water Proof Sheathing, 500 sq. ft., 1 ply, 65¢; 2 ply, 85¢; 3 ply, $1.10; 4 ply, $1.25.
Deafening Felt, 9, 6 and 4½ sq. ft. to lb. ton.....$50.00
Red Rope Roofing, 250 sq. ft. per roll.....$1.75

Tarred Paper—
1 ply (roll 400 sq. ft.), ton.....
$31.00@$35.00
2 ply, roll 108 sq. ft.....57¢
3 ply, roll 108 sq. ft.....80¢
Slater's Felt (roll 500 sq. ft.).76¢

Sand and Emery—
Flint Paper and Cloth..50&10@—%
Garnet Paper and Cloth...25%
Emery Paper and Cl'h..50&10@60%

Parers— Apple—
Advance.....₱ doz. $4.00
Baldwin.....₱ doz. $4.00
Bonanza Improved.....each $2.50
Daisy.....₱ doz. $4.00
Dandy.....each $7.50
Eureka Improved.....each $20.00
Family Bay State.....₱ doz. $15.00
Improved Bay State.....₱ doz. $36.00
Little Star.....₱ doz. $5.00
New Lightning.....₱ doz. $7.00
Reading 72.....₱ doz. $3.25
Reading 78.....₱ doz. $6.25
Rocking Table.....₱ doz. $6.50
Turn Table 98.....₱ doz. $8.00
White Mountain.....₱ doz. $5.00

Potato—
Saratoga.....₱ doz. $7.00
White Mountain.....₱ doz. $6.00

Picks and Mattocks—
List, Feb. 23, 1899..70&5@70&10%
Cronk's Handled Garden Mattock, ℔ doz., No. 2, $2.60; No. 3, $6.40.

Pinking Irons—
See *Irons, Pinking.*

Pincers—
Vaughan & Bushnell Mfg. Co.:
Blacksmiths', per doz., 10 in., $5.00; 12 in., $5.50; 14 in., $6.00.
Carpenters' Claw, per doz., 6 in., $2.00; 8 in., $2.75; 10 in., $3.50.

Pins, Escutcheon—
Brass .....50@50&10%
Iron, list Nov. 11, '85..60@60&10%

Pipe, Cast Iron Soil—
Carload lots.
Standard, 2-6 in...50&10@50&10&5%
Extra Heavy, 2-6 in......65&10%
Fittings .....70&10@70&10&5%

Pipe, Merchant—
Consumers, Carloads.

	Steel. Blk.	*Steel.* Galv.	*Iron.* Blk.	*Iron.* Galv.
	%	%	%	%
⅛ & ¼ in.	63	47	57	41
⅜ in.	65	51	59	41
½ in.	67	55	61	49
¾ to 6 in.	71	61	66	56
7 to 12 in.	66	51	61	46

Pipe, Vitrified Sewer—
Carload lots.
Standard Pipe and Fittings, 3 to 24 in., f.o.b. factory:
First-class 84%
Second-class 87%
NOTE.—Market irregular.

Pipe, Stove—

	Per 100 joints. C. L.	L. C. L.
Edwards' Nested:		
5 in., Standard Blue	$6.25	$7.25
6 in., Standard Blue	6.75	7.75
7 in., Standard Blue	7.75	8.75
5 in., Royal Blue	7.00	8.00
6 in., Royal Blue	7.50	8.50
7 in., Royal Blue	8.50	9.50
Wheeling Corrugating Co.'s Nested:		
5 in., Uniform Color	$6.15	$7.15
6 in., Uniform Color	6.65	7.65
7 in., Uniform Color	7.65	8.65

Planes and Plane Irons—
Wood Planes—
Bench, first qual.....30@30&10%
Bench, second qual...40@40&10%
Molding .....25@25&10%
Bailey's (Stanley R. & L. Co.)..35&2½%
Chapin-Stephens Co.:
Bench, First Quality.....30%
Bench, Second Quality.....40%
Molding and Miscellaneous.....25%
Toy and German.....30%
Union 60%

Iron Planes—
Bailey's (Stanley R. & L. Co.)....35%
Chapin's Iron Planes.....50&10%
Miscellaneous Planes (Stanley R. & L. Co.).....30&5%
Union 60%

Plane Irons—
Wood Bench Plane Irons, list Dec. 12, '06.....25%
Buck Bros.....30%
Chapin-Stephens Co.....25%
Stanley R. & L. Co.....35%
Union 50%
L. & I. J. White.....20&5@25%

Planters, Corn, Hand—
Kohler's Eclipse.....℔ doz. $8.00

Plates—
Felloe .....lb. 4@4¼¢
Self-Sealing Pie Plates (R. M. Co.). ℔ doz. $2.00.....50%

Pliers and Nippers—
Button Pliers.....75@75&10%
Gas Burner, per doz., 5 in., $1.25 @ $1.30; 6 in., $1.45 @ $1.50.
Gas Pipe.. 7 8 10 12-in.
$2.00 $2.25 $2.75 $3.50
Acme Nippers.....50&5%
Cronk & Carrier Mfg. Co.:
American Button.....80%
Improved Button.....75&10%
Cronk's 60%
No. 80 Linemen's.....50%
Stub's Pattern.....45%
Combination and others.....33⅓%
Heller's Farriers' Nippers, Pincers and Tools.....40&5@40&10&5%
The Nettleton Mfg. Co. Reversible Cutting Nippers.....40%
P., S. & W. Tinners' Cutting Nippers 40%
Wm. Schollhorn Co.:
Bernard, 33⅓%; Elm City, 33⅓%; Paragon, 50%; Lodi, 50%.
Swedish Side, End and Diagonal Cutting Pliers.....50%
Utica Drop Forge & Tool Co.:
Pliers and Nippers, all kinds.....40%
Vaughan & Bushnell Mfg. Co.:
Gas Burner, per doz., 5 in., $2.50; 6 in., $3.00.
Gas, per doz., 7 in., $3.50; 8 in., $3.75; 10 in., $4.50.
Nippers, Horseshoers' Cutting, 40%; Hoof Paring.....40%

Plumbs and Levels—
Chapin-Stephens Co.:
Plumbs and Levels.....30@30&10%
Chapin's Imp. Brass Cor..40@40&10%
Pocket Levels.....30@30&10%
Extension Sights.....30@30&10%
Machinists' Levels.....40@40&10%
Disston's Plumbs and Levels....60&10%
Disston's Pocket Levels.....60&10%
C. E. Jennings & Co.'s Iron.....33⅓%
C. E. Jennings & Co.'s Iron, Adjustable .....40&7½%
Stanley R. & L. Co.....40%
Stanley's Duplex.....30%
Woods' Extension.....33⅓%

Poachers, Egg—
Buffalo Steam Egg Poachers, ℔ doz., No. 1, $6.00; No. 2, $9.00; No. 3, $9.00; No. 4, $12.00.....50%

Points, Glaziers'—
Bulk and 1-lb. papers,.....lb. 10¢
½-lb. papers.....lb. 9@10½¢
¼-lb. papers.....lb. 9¾@11¢

Pokes, Animal—
Ft. Madison Hawkeye.....℔ doz. $3.25
Ft. Madison Western.....℔ doz. $4.00

Police Goods—
Manufacturers' Lists...25@25&5%
Tower's 25%

Polish—Metal, Etc—
Glasbrite, No. 2, 5 lb can (powder), each, $1.25; ℔ doz., $12.00; No. 2, 10 lb can (cake), each, $2.50; ℔ doz., $24.00.
Prestoline Liquid, No. 1 (½ pt.), ℔ doz., $3.00; No. 2 (1 qu.), $9.00..40%
Prestoline Paste.....40%
George William Hoffman:
U. S. Metal Polish Paste, 3 oz. boxes, ℔ doz. 50¢; ℔ gro. $4.50; ½ lb boxes, ℔ doz. $1.25; 1 lb boxes, ℔ doz. $2.25.
U. S. Liquid, 8 oz. cans, ℔ doz., $1.25.
Barkeepers' Friend Metal Polish, ℔ doz., $1.75.

Stove—
Black Eagle Benzine Paste, 5 lb cans, ℔ lb 10¢
Black Eagle, Liquid, ½ pt. cans, ℔ doz. 75¢
Black Jack Paste, ¾ lb cans, ℔ gr. $9.00
Black Kid Paste, 5 lb can....each, $0.65
Ladd's Black Beauty Liquid, per 100 tins.....$6.75
Joseph Dixon's, ℔ gr. $5.75.....10%
Dixon's Plumbago.....℔ lb 6¢
Fireside .....℔ gr. $2.50
Gem, ℔ gr. $4.50.....10%
Japanese .....gr. $3.50
Jet Black .....℔ gr. $3.50
Peerless Iron Enamel, 10 oz. cans.. ℔ doz. $1.50
Wynn's Black Silk:
Paste, cans, ℔ doz., 5 oz., $0.75; ½ lb, $1.00; 1 lb.....$1.75
Paste, ℔ 5 lb can.....$0.70
Liquid, cans, ℔ doz., 6 oz., $0.75; ½ pt., $1.00; 1 pt.....$1.75
Steel Range Enamel, ℔ doz., ¼ pt., $1.00; ½ pt., $1.25.

Peppers, Corn—
1 qt. Square..doz.$0.80; gro.$8.00
1 qt. Round..doz.$0.90; gro.$9.00
1½ qt. Square.doz.$1.00; gro.$10.00
2 qt. Square..doz.$1.20; gro.$12.00

Post Hole and Tree Augers and Diggers—
See also *Diggers, Post Hole, &c.*

Posts, Steel—
Steel Fence Posts, each, 5 ft., 42¢; 6 ft., 46¢; 6½ ft., 48¢.
Steel Hitching Posts.....each $1.30

Potato Parers—
See *Parers, Potato.*

Pots, Glue—
Enameled .....35&10%
Tinned .....30&10%

Powder—
In Canisters:
Duck, 1 lb.....each 45¢
Fine Sporting, 1 lb....each 75¢
Rifle, ½-lb.....each 15¢
Rifle, 1-lb.....each 25¢
In Kegs:
12½-lb. kegs.....$3.50
25-lb. kegs.....$4.50
King's Semi-Smokeless:
Keg (25 lb bulk).....$6.50
Half Keg (12½ lb bulk).....$3.50
Quarter Keg (6¼ lb bulk).....$1.90
Case 24 (1 lb cans bulk).....$3.50
Half case (1 lb cans bulk).....$4.50

King's Smokeless:	Shot Gun.	Rifle.
Keg (25 lb bulk)	$12.00	$15.00
Half Keg (12½ lb bulk)	6.25	7.75
Quarter Keg (6¼ lb bulk)	3.25	4.00
Case 24 (1 lb cans bulk)	14.00	17.00
Half case 12 (1 lb c. bk)	7.25	8.75

Robin Hood Sm'less Shot Gun..80&20%

Presses—
Fruit and Jelly
Enterprise Mfg. Co.....20@25%
Seal Presses—
Morrill's No. 1, ℔ doz., $20.00.....50%

Pruning Hooks and Shears
See *Shears.*

Pullers, Nail—
Cyclops 60%
Miller's Falls, No. 3, ℔ doz., $12.00.....33⅓&10%
Morrill's No. 1, Nail Puller, ℔ doz. $20.00 .....50%
Pearson No. 1, Cyclone Spike Puller, each $30.00.....50%
Scranton, Case Lots:
No. 2B (large).....$5.50
No. 3B (small).....$5.00
Smith & Hemenway Co.:
Diamond B, case lots, ℔ doz., Large, $9.00; Small, $7.50.
Giant No. 1, ℔ doz., $18; No. 1½, $16.50; No. 3, $15.....33⅓%
Staple Pullers, Utica and Davison 60%
Parrot Tack and Stub Puller, ℔ doz., 75c.: ℔ gro., $6.00

Pulleys, Single Wheel—

Inch	1½	1¾	2	3
Awning or Tackle, doz.	$0.50	.45	.60	1.05

Hay Fork, Swivel or Solid Eye. doz., ¼ in., $1.25; 5 in., $1.55

Inch	2	2½	2¾
Hot House, doz.	$0.65	.85	1.00
Inch	1¼	1½	1¾ 2
Screw, doz.	$0.16	.19	.23 .30
Inch	1¾	2	2¼ 2½
Side, doz.	$0.25	.40	.55 .60
Inch	1½	1¾	2 2½

Stowell's:
Ceiling or End, Anti-Friction..60&10%
Dumb Waiter, Anti-Friction..60&10%
Electric Light.....60%
Side, Anti-Friction.....60&10%

Sash Pulleys—
Common Frame; Square or Round End, per doz, 1¾ and 2 in......16@19¢
Auger Mortise, no Face Plate, per doz., 1¾ and 2 in.....17@19¢
Acme, No. 35..1¾ in., 18½¢; 2 in., 20½¢
Fox-All-Steel, Nos. 3 and 7, 2 in.... ℔ doz. 50
Grand Rapids All Steel Noiseless..50%
Ideal .....70&5%
Niagara, No. 25, 1¾ in., 18½¢; 2 in., ...20½¢
No. 26, Troy..1¾ in., 14½¢; 2 in., 16½¢
Star, No. 26...1¾ in., 18½¢; 2 in., 20½¢
Tackle Blocks—See Blocks.

Pumps—
Cistern 60%
Pitcher Spout.....75&5@75&10%
Wood Pumps, Tubing, &c..45@50%
Barnes Dbl. Acting (low list)..40&10%
Barnes Pitcher Spout.....75&10%
Contractors' Rubber Diaphragm No. 2, B. & L. Block Co.....$16.00
Daisy Spray Pump.....℔ doz. $6.50
Flint & Walling's, Fast Mail Hand, (low list).....50%
Flint & Walling's Fast Mail (low list) 50%
Flint & Walling's Tight Top Pitcher. .....75&10%
National Specialty Mfg. Co., Measuring, Nos. 2, $6.00; 3, $5.50.....30%
Myers' Pumps (low list).....40&10%
Myers' Power Pumps.....40&10%
Myers' Spray Pumps.....40&10%

Pump Leathers—
Plunger and Lower Valve—Per gro.:

Inch...	2	2¼	2½	2¾
	$2.20	2.50	2.75	3.00
Inch...	3	3¼	3½	3¾ 4
	$3.30	3.60	3.85	4.10 4.40

Plunger Cup Leathers—Per 100:

Inch...	2½	3	3½	4
	$2.75	3.85	5.00	6.00

Punches—
Saddlers' or Drive, good..... *doz. 50@75¢*
Spring, single tube, good quality .....$1.75@2.00
Revolving (4 tubes)..... *doz. $3.50@3.75*
Bemis & Call Co.'s Cast St'l Drive.50%
Morrill's Nos. 1AA, 1A, 1B, 1C, $15.00 .....50%
Hercules, 1 die, each $5.00.....50%
Niagara Hollow Punches.....40%
Niagara Solid Punches.....55&10%
Wm. Schollhorn Co.:
Belt and Ticket, Bernard, 33⅓%; Paragon, 50%; Lodi.....50%
Tinners' Hollow, P., S. & W. Co.33⅓%
Tinners' Solid, P., S. & W. Co., ℔ doz., $1.44.....50%

Rail—Barn Door, &c.—
Sliding Door, Painted Iron..... 2½@2¾¢
Sliding Door, Wrought Brass, 1⅛ in., lb., 36¢ 30%
Allith Mfg. Co.: Reliable Hanger Track 50%
Cronk's:
Double Braced Steel Rail..℔ ft. 3¼¢
O. N. T. Rail..... 3 ¢
Hinge Rail.....3½¢
Griffin's:
xxx, ℔ 100 ft., 1 x 3-16 in., $3.00; 1¼ x 3-16 in., 3.50.
Hinged Hanger, ℔ 100 ft., 1 x 3-16 in., $3.10; 1¼ x 3-16 in., $3.80.
Lane's:
Hinged Track, ℔ 100 ft., 1 in., $3.40; 1¼ in., $3.96.
O. N. T., ℔ 100 ft., 1 in., $3.00; 1¼ in., $3.60; 1½ in., $4.00.
Standard, 1¼ in.....℔ 100 ft. $4.00
Lawrence Bros.:
℔ 100 ft. No. 201, $4.00; No. 202, $4.00
New York, 1 x 3-16 in., ℔ 100 ft. $3.00
McKinney's:
Hinged Hanger Rail, ℔ ft., 11¢..50%
None Better.....℔ ft. 3¾¢
Standard .....℔ ft. 9¢
Myers' Stayon Track.....60&10%
Richards' Mfg. Co.:
Common, 1 x 3-6 in., $3.00; 1¼ x 3-16, $3.25; 1¼ x 3-16, $3.50.
Special Hinged Hanger Rail...60&10%
Lag Screw Rail, No. 65.....50%
Gauge Trolley Track, ℔ ft., No. 31, 9¢; No. 32, 14¢; No. 33, 20¢.
No. 50.....60&10%
Nos. 61, $3.00; 62, $3.25; 63, $3.50; 64, $4.00; 45, $3.25; 46, $3.50; 49, No. 1, $3.25; 49, No. 2, $3.50.
Stowell's:
Cast Rail.....℔ ft. 2¼¢
Steel Rail, Plain.....2¾¢
Wrought Bracket, 1 3-16 in....℔ ft. 3¢
Wrought Bracket, 1¼ x 5-16..℔ ft. 7¢
Swett's Hylo, ℔ ft. 11¢.....60%
P. L. B. Steel Rail.....℔ 100 ft. $3.00
No. 0, 1 x 3-16.....℔ 100 ft. $3.00

Rakes—
NOTE.—Many goods are sold at net prices.
Fort Madison Red Head Lawn....$3.25
Fort Madison Blue Head Lawn....$2.70
Jackson Lawn, 29 and 30 teeth, ℔ doz., net.....$4.25
Cronk's:
New Champion Garden, ℔ doz., 12 teeth, $15.00; 14, $16.50; 16, $18.00..75%
Victor Garden, ℔ doz., 12 teeth, $15.00; 14, $16.50; 16, $18.00.....60%
Queen City Lawn, ℔ doz., 20 teeth, $2.85; 24, $3.00.....Net
Anticlog Lawn, ℔ doz.....$4.00
Malleable Garden.....70&10%
Ideal Steel Garden, ℔ doz. 12 teeth, $15.00; 14, $16.00; 16, $18.00.....85%
Kohler's:
Lawn Queen, 20-tooth....℔ doz. $2.90
Lawn Queen, 24-tooth....℔ doz. $3.00
Paragon, 20-tooth.....℔ doz. $2.70
Paragon, 24-tooth.....℔ doz. $2.75
Steel Garden, 14-tooth...℔ doz. $2.40
Malleable Garden, 14-tooth, ℔ doz. $1.75@2.00

Rasps, Horse—
Disston's 75%
Heller Bros.'.....70&5@70&10&5%
Liverlight Bros.' Gold Medal.70&10@75%
McCaffrey's American Standard, ...60&10&5%
New Nicholson.....70&10@75%
See also Files.

Razors—
Liana Bo-ras-le.....60%
Fox Razors, ℔ doz., No. 42, $30.00; No. 44, $20.00; No. 82, Platina, $25.00. } Net

Red Devil.....50%
Silberstein:
Carbo Magnetic, $21.00; Griffon, No. 65, $13.50; Griffon, No. 00, $12.00; all other Razors, 40%.

Safety Razors—
Kampfe Bros.:
Star Safety, 25%; Star Interchangeable, 25%; Star Safety Corn, 25%.
Silberstein 40%

Reels, Fishing—
Hendryx:
M 6, Q 6, A 6, B 6, M 9¼, M 16, Q 16, A 16, B 16, 4008, Rubber, Populo, Nickeled Populo.....20%
Aluminum, German Silv., Bronze.25%
1240 N, 124 N.....20%
3004 N, 06 N, 6 RM, G 9.....25%
4 N, 6 PN, 24 N, 28 PN.....20%
2904 P, 33¼%; 2904 PN, 33⅓%; 0924 N., 33⅓%; 02084 N., 33⅓%; 002904 PN., 33⅓%; 802 N., 33⅓%.....
986 PN, 2904 N, 974 PN.....25%
5009 PN, 5009 N.....20%
Competitor, 102 P, 102 PN, 202 P, 202 PN, 102 PR, 202 PR.....20%
304 P, 304 PN, 00304 P, 00304 PN.33⅓%

Registers—*List July 1, 1903.*
Japanned, Electroplated and Bronzed 66⅔%
White Porcelain Enamel....60%
Solid Brass or Bronze Metal, ...40&10%

Revolvers—
Single Action.....95¢@$1.00
Double Action, except 44 cal..$1.80
Double Action, 44 caliber....$2.00
Automatic $3.50
Hammerless $4.00

Riddles, Hardware Grade
16 in.....per doz.$2.50@$2.75
17 in.....per doz.$2.75@$3.00
18 in.....per doz.$3.00@$3.25

Rings and Ringers—
Bull Rings—

	2	2½	3 inch.
Steel	$0.70	0.75	0.80 doz.
Copper	$1.15	1.35	1.75 doz.

Rea's Improved Self-Piercing, ℔ doz., Copper, 2 in., $1.25; 2½ in., $1.50; 3 in., $1.75.

Hog Rings and Ringers—
Hill's Rings, gro. boxes.$4.00@$4.50
Hill's Ringers, Gray Iron..... *doz. 50@55¢*
Hill's Ringers, Malleable Iron.. *doz. 70@75¢*
Blair's Rings...*per gro.$4.75@5.25*
Blair's Ringers.per doz. $0.60@ .65
Brown's Rings..*per gro.$5.00@5.50*
Brown's Ringers.per doz.$0.60@ .65

Rivets and Burrs—
Copper .....33½@35%
Carriage, Coopers', Tinners, &c.:
Black .....70&10%
Metallic Tinned.....70%

Bifurcated and Tubular—
Assorted in Boxes.
Bifurcated, per doz. boxes, pasteboard boxes, 23@25¢; Tin boxes, 29@32¢.
Tubular, per doz. boxes, 50 count, 32¢; 100 count, 51@58¢.

Rollers—
Acme, Stowell's Anti-Friction.....50%
Cronk's Stay No. 65, $0.90; No. 50 .....$1.00
Cronk's Brinkerhoff No. 55, $0.60; No. 56.....$0.84
Lane's Stay.....40%
Richards' Stay:
Handy Adj. and Reversible No. 53.75¢
O. K. Adj. and Reversible No. 58.50¢
Lag Screw, Nos. 55 and 57.....50%
Underwriters', Nos. 59, 60.....50%
Favorite, No. 54.....50%
Stowell's Barn Door Stay..℔ doz. $1.00
Swett's Anti-Friction.....50%
Screw and Spike Stay.....℔ doz. 63¢
Hinge Adjustable Stay.....℔ doz. 90¢

Rope—
Manila, 7-16 in. diam. and larger: Pure .....lb., 13@13½¢
Sisal, 7-16 in. diam. and larger: Pure .....lb., 9¼¢
Sisal, 7-16 in. diam. and larger: No. 2 quality.....lb., 7¾@8¢
Sisal, Hay, Hide and Bale Ropes, Medium and Coarse: Mixed .....lb., 7¾@8¢
Pure .....lb., 9¼¢
Sisal, Tarred, Medium Lath Yarn, Coarse and Untarred: Mixed .....lb., 7@7½¢
Pure .....lb., 8¢
Cotton Rope: Best, ¼-in. and larger...18@20¢
Medium, ¼-in. and larger.16@17¢
Common, ¼-in. and larger..10¢
In coils, ½¢ advance.
Jute Rope: Thread, No. 1, ¼-in. & up, lb., 9¢
Thread, No. 2, ¼-in. & up, lb., 8½¢
Old Colony Manila Transmission Rope .....℔ lb 17½¢

Wire Rope—
Galvanized .....37½&2½%
Plain .....45&2½%

Ropes, Hammock—
Covert Mfg. Co.:
Jute, 35%; Sisal.....20%

Rules
Boxwood .....60@60&10%
Ivory .....35&10@35&10&5%
Chapin-Stephens Co.:
Boxwood 60%
Flexifold 40%
Ivory .....25@25&10%
Miscellaneous .....55@55&10%
Stephens' Combination.....55%
Stationers' 10%
Keuffel & Esser Co.:
Folding, Wood.....35&10%
Folding, Steel.....33⅓&10%
Lufkin's Steel.....50&10%
Lufkin's Lumber.....50%

Stanley R. & L. Co.:
Boxwood 60%
Ivory 45%
Miscellaneous 30%
Zig Zag 40%
Zig Zag, Pin Joint 42½%
Upson Nut Co.:
Boxwood ..... 60@60&10%
Ivory ..... 35&10@35&10&10%

Sash Balances—
See *Balance, Sash.*

Sash Locks—
See *Locks, Sash.*

Sash Weights—
See *Weights, Sash.*

Sausage Stuffers or Fillers
See *Stuffers or Fillers, Sausage.*

Saw Frames—
See *Frames, Saw.*

Saw Sets—See *Sets, Saw.*

Saw Tools—See *Tools, Saw.*

Saws—
Atkins':
Circular 45%
Band ..... 50@60&10%
Butcher Saws 50%
Cross Cuts 35%
One-Man Cross Cut 40%
Narrow Cross Cut 50%
Hand, Rip and Panel ..... 35&5%
Miter Box and Compass 40%
Mulay, Mill and Drag 45%
Chapin-Stephens Co.:
Turning Saws and Frames..30@30&10%
Diamond Saw & Stamping Works:
Sterling Kitchen Saws.....30&10&10%
Disston's:
Circular, Solid and Ins'ted Tooth..50%
Band, 2 to 18 in. wide 60%
Hand, ¼ to 1¼ 60%
Crosscuts 45%
Narrow Crosscuts 50%
Mulay, Mill and Drag 50%
Framed Woodsaws 25%
Woodsaw Blades 25%
Woodsaw Rods, Tinned 15%
Hand Saws, Nos. 12, 99, 9, 16, d100, D8, 120, 76, 77, 8 ..... 25%
Hand Saws, Nos. 7, 107, 107½, 3, 1, 0, 00, Combination 30%
Compass, Key Hole, &c. 25%
Butcher Saws and Blades 30%
C. E. Jennings & Co.'s:
Back Saws 25%
Butcher Saws 30%
Compass and Key Hole Saws..35&5%
Framed Wood Saws 30%
Hand Saws ..... 20&2½%
Wood Saw Blades 35%
Millers Falls:
Butcher Saws ..... 15&10%
Star Saw Blades ..... 15&10%
Massachusetts Saw Works:
Victor Kitchen Saws.....40&10&50%
Butcher Saws Blades ..... 35@40%
Peace & Richardson's Hand Saws...30%
Simonds':
Circular Saws 45%
Crescent Ground Cross Cut Saws..30%
One-Man Cross Cuts ..... 40&10%
Gang Mill, Mulay and Drag Saws.45%
Band Saws 50%
Back Saws ..... 25@25&7½%
Butcher Saws ..... 35@35&7½%
Hand Saws ..... 22@25&7½%
Hand Saws, Bay State Brand 45%
Compass, Key Hole, &c..25@25&7½%
Wood Saws ..... 40&7½%
Wheeler, Madden & Clemson Mfg. Co.'s Cross Cut Saws 50%

Hack Saw Blades and Framos—
Atkins' Hack Saw Blades A A A A..25%
Disston's:
Concave Blades 25%
Keystone Blades 35%
Hack Saw Frames 30%
Simonds File Co. 35%
C. E. Jennings & Co.'s
Hack Saw Frames, Nos. 175, 180 ..... 40&7½%
Hack Saws, Nos. 175, 180, complete, 40&7½%
Goodell's Hack Saw Blades.....40&10%
Griffin's Hack Saw Frames..35&5&10%
Griffin's Hack Saw Blades....35&6&10%
Star Hack Saws and Blades.....15&10%
Sterling Hack Saw Blades....30&10&5%
Sterling Hack Saw Frames..30&10&10%
Sterling Power Hack Saw Machines, each, No. 1, $25.00; No. 2, $30.00..10%
Victor Hack Saw Blades 25%
Victor Hack Saw Frames 40%

Scroll—
Barnes, No. 7, $15 ..... 25%
Barnes' Scroll Saw Blades 25%
Barnes' Velocipede Power Scroll Saw, without boring attachment, $18; with boring attachment, $20.....20%
Lester, complete, $10.00 ..... 15&10%
Rogers, complete, $3.50 and $4.00.. 15&10%

Scales—
Family, Turnbull's....50@50&10%
Counter:
Hatch, Platform, ½ oz. to 4 lbs. ..... doz. $5.50
Two Platforms, ½ oz. to 8 lbs. ..... doz. $16.20
Union Platform, Plain..$1.70@1.90
Union Platform, Stpd..$1.85@2.15
Chatillon's:
Eureka 25%
Favorite 40%
Crocers' Trip Scales 50%
Chicago Scale Co.:
The Little Detective.....25 lbs 50%
Union or Family No. 2 ..... 40%
Portable Platform (reduced list)..50%
Wagon or Stock (reduced list)..25@35%
The Standard Portables 45%
The Standard R. R. and Wagon ..... 50&10%

Scrapers—
Box, 1 Handle....doz. $2.00@2.25
Box, 2 Handle....doz. $3.50@3.60
Ship....Light, $2.00; Heavy, $1.50
Adjustable Box Scraper (S. R. & L. Co.). $6.00 ..... 40%
Chapin-Stephens Co., Box...30@30&10%

Screws—Bench and Hand
Bench, Iron, doz., 1 in., $2.50@2.75; 1½, $3.00@3.25; 1¼, $3.50@3.75
Bench, Wood ..... 20@20&10%
Hand, Wood ..... 20@20&10%
R. Bliss Mfg. Co., Hand..20&5@20&10%
Chapin-Stephens Co., Hand 20%

Coach, Lag and Hand Rail—
Lag, Cone Point, list Oct. 1, '99 ..... 75&15%
Coach, Gimlet Point, list Oct. 1, '99 ..... 75&10%
Hand Rail, list Jan. 1, '81.... 70&10@75%

Jack Screws—
Standard List.....70&10@75%
Millers Falls ..... 50&10&10%
P., S. & W. 50%
Swett Iron Works ..... 75@80%

Machine—
List Jan. 1, '98:
Flat or Round Head, Iron, Brass or Bronze....50@50&10%
Fillister Head, Iron, Brass or Bronze ..... 40@40&10%

Set and Cap—
Set (Iron) ..... 75&10&7½%
Set (Steel), net advance over Iron 25%
Sq. Hd. Cap ..... 70&10&7½%
Hex. Hd. Cap ..... 70&10&7½%
Rd. Hd. Cap ..... 50&7½%
Fillister Hd. Cap ..... 60&7½%

Wood—
List July 23, 1903.
Flat Head, Iron.....87½&5@..%
Round Head, Iron.....85&5@..%
Flat Head, Brass....82½&5@..%
Round Head, Brass....80&5@..%
Flat Head, Bronze...77½&5@..%
Round Head, Bronze..75&5@..%
Drive Screws.....87½&5@..%

Scroll Saws—
See *Saws, Scroll.*

Scythes— *Per doz.*
Grass, No. 1, Plain....$6.25@6.75
Clipper, Bronzed Webb..$6.50@7.00
No. 3 Clipper, Pol'd Webb.. $6.75@7.25
No. 6 Clipper and Solid Steel, $7.00@7.50
Bush, Weed and Bramble, No. 2. $8.50@7.00
Grain, No. 1.....$8.25@8.75
Bronzed Webb, No. 1..$8.50@9.00
Nos. 3 and 4 Clipper, Grain.. $8.75@9.25
Solid Steel, No. 6.....$9.25@9.75

Seeders, Raisin—
Enterprise ..... 25@30%

Sets— Awl and Tool—
Fray's Adj. Tool Handles, Nos. 1, $12; 2, $18; 3, $12; 4, $9; 5, $7 ..... 50%
C. E. Jennings & Co.'s Model Tool Holders 30%
Millers Falls Adj. Tool Handles, No. 1, $12; No. 4, $12; No. 5, $18....15&10%

Garden Tool Sets—
Ft. Madison Three Plows, Hoe, Rake and Shovel ..... ℔ doz sets $9.00

Sets, Nail—
Octagon .....gro. $3.50@3.75
Buck Bros. 27½%
Cannon's Diamond Point, ℔ gro, $12, 40&10%
Mayhew's ..... ℔ gro. $9.00
Snell's Corrugated, Cup Pt.....40&10%
Snell's Knurled, Cup Pt.....40&10%
Victor Knurled Cup Pt....℔ gro. $7.50

Rivet—
Regular list .....75@75&10%

Saw—
Atkin's:
Criterion 40%
Adjustable 40%
Disston's Star, Monarch and Triumph 30%
Morrill's No. 1 ..... $15.00
Nos. 3 and 4, Cross Cut.....$20.60
No. 5, Mill.....$30.00
Nos. 10, 11, 95.....$15.60
No. 1 Old Style.....$10.00
Special $16.25
Giant Royal Cross Cut....℔ doz. $8.00
Royal, Hand ..... ℔ doz. $4.50
Taintor Positive ..... ℔ doz. $4.75

Shaving—
Fox Shaving Sets, No. 30 ..... ℔ doz., net, $24.00
Smith & Hemenway Co.'s 60%

Sharpeners, Knife—
Chicago Wheel & Mfg. Co.....70%
Pike Mfg. Co.:
Fast Cut Pocket Knife Hones, ℔ doz.....$1.50
Mounted Kitchen Sand Stone, ℔ doz.....$1.50
Natural Grit Carving Knife Hones, ℔ doz.....$3.00
Quick Cut Emery Carving Knife Hones, ℔ doz.....$1.50
Quick Edge Pocket Knife Hones, ℔ doz.....$2.50

Skate—
Smith & Hemenway Co., Eureka..20%

Shaves, Spoke—
Iron .....doz. $1.10@1.25
Wood .....doz. $1.75@2.25
Bailey's (Stanley R. & L. Co.).....45%
Razor Edge (Stanley R. & L. Co.), Iron, 50%; Wood 55%
Chapin-Stephens Co.....30@30&10%
Goodell's ℔ doz. $9.00 ..... 15&10%
Wood's F1 and F2 ..... 50%

Shears—
Cast Iron.. 7 8 9 in.
Best ....$16.00 18.00 20.00 gro.
Good ....$13.00 15.00 17.00 gro.
Cheap .. $5.00 6.00 7.00 gro.
Straight Trimmers, &c.:
Best quality Jap....70@70&10%
Best quality, Nickel..60@60&10%
Fair quality, Jap....80@80&5%
Fair quality, Nickel..75@75&10%
Tailors' Shears.....40@40&10%
Acme Cast Shears ..... 40@40&5%
Heinisch's Tailor's Shears 10%
Wilkinson Shear & Cutlery Co.:
Sheep, 1900 list.....30&10&5%
Grass ..... 50&10%
Horse or Mule ..... 50&10%

Tinners' Snips—
Steel Blades.....20&5@20&10%
Steel Laid Blades.....40&10@50%
Forged Handles, Steel Blades, Berlin 50%
Heinisch's Snips 40%
Jennings & Griffin Mfg. Co.'s, 6½ to 10 in. 50%
Niagara Snips 40%
P., S. & W. Forged Handles..... 20%

Pruning Shears—
Cronk's Hand Shears 33⅓%
Cronk's Wood Handle Shears.....33⅓%
Disston's Combined Pruning Hook and Saw, ℔ doz. $18.00 ..... 25%
Disston's Pruning Hook only, ℔ doz., $12.00 ..... 25%
John T. Henry Mfg. Co.:
Pruning Shears, all grades.....40%
P., S. & W. Co. 30%
Wilkinson Shear & Cutlery Co.:
Hedge, Wilcut Brand.....60&10%
Lawn and Border, Wilcut Brand. 60&10%

Sheaves—Sliding Door—
Stowell's Anti-Friction 50%
Reading 40%
R. & E. list 15%
Wrightsville Hatfield Pattern.....87½%

Sliding Shutter—
Reading list 40%
R. & E. list 10%

Shells—Shells, Empty—
Brass Shells, Empty:
Climax, 10 and 12 gauge.....65&10%
Club, Rival, 65&5%; Firat Quality, 60&5%
Paper Shells, Empty:
New Rapid, 10, 12, 16 and 20 gauge, 25&10%
Climax, 10 and 12 gauge; Acme, 10, 12, 16 and 20 gauge; Ideal, 10, 12, 16 and 20 gauge; Leader grade, 25&5%
Union, League, 12 and 12 gauge; Rival Grade 25%
New Climax, Defiance, 10, 12, 14, 16 and 20 gauge; Climax, 14, 16 and 20 gauge ..... 20&5%
Challenge, Monarch, 10, 12, 16 and 20 gauge; League, Union, 14, 16 and 20 gauge; Repeater Grade..20%
Expert, 10, 12, 16 and 20 gauge, 33⅓&5%
Robin Hood, Low Brass.....20&5%
Robin Hood, High Brass.....30&5%
Indian, for Black Powder.....25&5%

Shells, Loaded—
Loaded with Black Powder..40%
Loaded with Smokeless Powder, medium grade ..... 40&5%
Loaded with Smokeless Powder, high grade .....40&10&10%
Robin Hood:
Smokeless Robin Hood, Low Brass ..... 40&10%
Smokeless Comets, High Brass, 40&10&10&5%
Indian, Black Powder.....40&5%
Union Metallic Cartridge Co.:
New Club, Black Powders.....40%
Nitro Club, Smokeless Powders.40&5%
Arrow, Smokeless Powders.40&10&10%
Winchester:
Smokeless Repeater Grade.....40&5%
Smokeless Leader Grade...40&10&10%
Black Powder 40%

Shingles, Metal— Per Sq.
Edwards Mfg. Co.:

	Painted.	Galv.
14 x 20	$1.25	$6.00
10 x 14	4.50	6.25
7 x 10	4.75	6.50

Wheeling Corrugating Co.:

Dixie, 14 x 20 in.	$4.25	$5.50
Dixie, 10 x 14 in.	4.50	6.00
Dixie, 7 x 10 in.	5.00	6.75

Shoes, Horse, Mule, &c.—
F.o.b. Pittsburgh:
Iron .....per keg. $4.10
Steel .....per keg. $3.85
Burden's, all sizes ..... ℔ keg $3.90

Shot—
25-lb. bag.
Drop, up to B $1.95
Drop, B and larger 2.20
Buck 2.20
Chilled 2.20
Dust 2.40

Shovels and Spades—
Association List, Nov. 15, 1902. 40%

Snow Shovels—
Long Handle..... $2.75@$3.00
Wood and Mall. D. Handle, $3.25@$3.50

Sieves and Sifters—
Hunter's Imitation..... gro. $9.50@10.00
Hunter's Genuine..... per gro. $12.00@12.50
Buffalo Metallic Riued, R. M. Co., ℔ gr.

14&16	16&18	18&20
$13.20	$13.50	$14.40

Sieves, Seamless Metallic
—Per dozen.—

Mesh	14	16	18	20
Iron Wire	$1.05	1.05	1.10	1.20
Tinned Wire	$1.15	1.15	1.20	1.30

Sieves, Wooden Rim—
Nested, 10, 11 and 12 Inch.
Mesh 18, Nested....doz. $0.90@0.95
Mesh 20, Nested....doz. $1.00@1.05
Mesh 24, Nested....doz. $1.30@1.40

Sinks, Cast Iron—
Painted, Standard list:
12 x 12 to 22 x 36 in.....60%
20 x 40 to 24 x 50 in.....50%
24 x 60 to 24 x 120 in.....30%
Barnes' low list:
Up to and including 20 x 36 in....50%
20 x 40 to 24 x 50 in. 45%
NOTE.—There is not entire uniformity in lists used by jobbers.

Skeins, Wagon—
Cast Iron.....70@75&10%
Steel .....40@45%

Slates, School—
Factory Shipments.
"D" Slates.....50@50&10%
Eureka, Unexcelled Noiseless.. 60&5 tens
Victor A, Noiseless..60&5 tens &5%

Slaw Cutters—See *Cutters.*

Snaps, Harness—
German .....40@40&10%
Covert Mfg. Co.:
Derby, 25%; Yankee, 30&2%; Yankee Roller, 30&2%
High Grade, 40%; Trojan.....40%
Jockey 25%
Oneida Community:
Harness Snaps, 1 inch.....60&5%
Swivel Snaps 60%
Swivels 50%

Snaths—
Scythe 50%

Snips, Tinners—See *Shears.*

Spoons and Forks—
Silver Plated—
Good Quality.....50&10@60&5%
Cheap .....60@60&10%
International Silver Co.:
1847 Rogers Bros., 40&10%; Rogers & Hamilton.....50&10%
Rogers & Bro., William Rogers' Eagle Brand ..... 50&10%
Anchor, Rogers Brand 60%
Wm. Rogers & Son.....60&10%

Miscellaneous—
German Silver.....60@60&5%
Cattaraugus Cutlery Co.:
Seneca Silver 50%

Tinned Iron—
Teas .....per gro. 45@50¢
Tables.....per gro. $0.50@$1.00

Springs— Door—
Bardsley's Spring and Check.....40%
Chicago (Coil) .....40&10%
Gem (Coil) 20%
Pullman (Coil) 35%
Reliance (Coil) .....40&10%
Star (Coil) 30%
Torrey's Rod, 30 in..... ℔ doz. $1.10

Carriage, Wagon, &c.—
1¼ in. and Wider: Per lb
Black .....4½@4½¢
Half Bright.....4½@4½¢
Bright .....4¾@5¢
Painted Seat Springs:
1½ x 2 x 26.....per pr. 45@47¢
1½ x 3 x 28.....per pr. 65@70¢

Sprinklers, Lawn—
Enterprise ..... 25@30%
Philadelphia No. 1, ℔ doz. $12; No. 2, $15; No. 3, $20 ..... 30%
Pleuger & Henger Mfg. Co.:
Cactus, 65&5%; Japanese, 70&5%; Nationals, 60&5%.

Squares—
Nickel plated.. } List Jan. 5, 1900.
Steel and Iron. } 75@—%
Rosewood Hdl. Try Square and T-Bevels .....60&10&10@70%
Iron Hdl. Try Squares and T-Bevels .....40&10@40&10&10%
Disston's Try Squares and Bevels, Rosewood Handle, 60&10%; Iron Stock and Bevel 15%
Winterbottom's Try and Miter, No. 1, 35%; No. 2 ..... 45%

Squeezers, Lemon
Wood, Common, gro., No. 0, $5.25@$5.50; No. 1, $6.25@$6.50.
Wood, Porcelain Lined:
Cheap .....doz. $1.00
Good Grade .....doz. $1.25
Tinned Iron.....doz. $0.75@1.25
Iron, Porcelain Lined...doz. $1.75

Staples—
Barbed Blind.....lb. 6@6¼¢
Electricians', Association list.. 80&10&10&10%
Fence Staples, Plain, $2.25; Galvanized $2.55
Poultry Netting Staples..... per lb. 3¼@3¼¢

Steels, Butchers'—
Dick's 30%
Foster Bros. 30%
C. & A. Hoffmann's 40%

Steelyards— ....30@30&10%

Stocks and Dies—
Blacksmiths' .....50@50&10%
Curtis Rev'ble Ratchet Die Stock..25%
Derby Screw Plates 25%
Green River 25%
Lightning Screw Plate 25%
Little Giant 25%
Reece's New Screw Plates 25%

Stoners, Cherry—
Enterprise ..... 25@30%

Stones—Oil, &c.
Chicago Wheel & Mfg. Co., 1904 list:
Gem Oil, Double Grit 65%
Gem Axe, Single or Double Grit.65%
Gem Slips 65%
Gem Razor Hones 50%
Pike Mfg. Co., 1904 list: ℔ lb
Arkansas St. No. 1, 3 to 5½ in. $2.80
Arkansas St. No. 1, 5½ to 8 in. $3.50
Arkansas Slips No. 1.....$4.00
Lily White Washita, 4 to 8 in. 60¢
Rosy Red Washita, 4 to 8 in..60¢
Washita St., Extra, 4 to 8 in. 50¢
Washita St., No. 1, 4 to 8 in. 40¢
Washita St., No. 2, 4 to 8 in. 30¢
Lily White Slips ..... 90¢
Rosy Red Slips ..... 90¢
Washita Slips, Extra ..... 80¢
Washita Slips, No. 1 ..... 70¢
Washita Slips, No. 2 ..... 40¢
India Oil Stones (entire list)....33⅓%
Quickcut Emery and Corundum Oil Stone, Double Grit 33⅓%
Quickcut Emery and Corundum Axe Stone, Double Grit 33⅓%
Quickcut Emery Rubbing Bricks.33⅓%
Hindostan No. 1, R'g'lar. ℔ lb 8¢
Hindostan No. 1, Small.. ℔ lb 10¢
Axe Stones (all kinds) .....
Turkey Oil Stones, Extra, 5 to 8 in. ..... ℔ lb 80¢
Queer Creek Stones, 4 to 8 in. 20¢
Queer Creek Slips ..... 40¢
Sand Stone ..... 6¢

Scythe Stones—

Chicago Wheel & Mfg. Co.:
Gem, ℔ wheel & Mfg. Co.: gro., 10 in., $8.00; 12 in., $10.80.
Norton Alundum Scythe Stones:
Less than 10 gross lots... ℔ gro. $6.00
Lots of 10 gross or more... ℔ gro. $4.50
Pike Mfg. Co., 1901 list:
Black Diamond S. S.. ℔ gro. $12.00
Lamoille S. S..... ℔ gro. $11.00
White Mountain S. S. ℔ gro. $9.00
Green Mountain S. S.. ℔ gro. $6.00
Extra Indian Pond S. S. ℔ gro. $7.50
No. 1 Indian Pond S. S. ℔ gro. $7.00
No. 2 Indian Pond S. S. ℔ gro. $4.50
Leader Red End S. S. ℔ gro. $4.50
Quick Cut Emery.... ℔ gro. $10.00
Pure Corundum..... ℔ gro. $18.00
Crescent $7.00
Emery Scythe Rifles, 2 Coat, $8
Emery Scythe Rifles, 3 Coat, $10
Emery Scythe Rifles, 4 Coat, $12
Balance of 1904 list 33⅓%

Stoppers, Bottle—

Victor Bottle Stoppers..... ℔ gro. $9.00

Stops— Bench—

Millers Falls..... 15&10%
Morrill's, ℔ doz., No. 1, $10.00..... 50%
Morrill's, No. 2, $12.50..... 50%

Door—

Chapin-Stephens Co..... 60@60&10%

Plane—

Chapin-Stephens Co..... 20%

Straps— Box—

Cary's Universal, case lots.... 20&10&10%

Stretchers, Carpet—

Cast Iron, Steel Points, ***doz.*** *60@60&10%*
Socket ***doz. $1.60***
Bullard, ℔ doz..... $4.00
Excelsior Stretcher and Tack Hammer Combined, ℔ doz. $6.00..... 20%

Woven Fence—

Franklin..... ea, $3.75

Strops, Razor—

Star Diagonal Strop..... 25%

Stuffers, Sausage—

Enterprise Mfg. Co..... 25@35&7¼%
National Specialty Co., list Jan. 1, 1902..... 30&5%

Sweepers, Carpet—

	℔ doz.
National Sweeper Co.: Louis XV, Roller Bearing, Gold Plated	$120.00
Hepplewhite, Roller Bearing, Silver Plated	$72.00
Sheraton, Roller Bearing, N'kel	$60.00
Ye Mission, Roller Bearing, Oxidized Coppered	$36.00
Transparent, Roller Bearing, Plate Glass top, Nickeled	$36.00
National Queen, Roller Bearing, Fancy Veneers	$27.00
Loyal, Roller Bearing, Veneers, Nickeled	$25.00
Triple Medal, Roller Bearing, Nickeled	$24.00
Marion, Roller Bearing, N'kel	$24.00
Marion Queen, Roller Bearing, Nickeled	$24.00
Monarch, Roller Bearing, N'kel	$22.00
Monarch, Roller Bearing, Jap.	$20.00
Perpetual, Regular B'r'gs, N'kel	$20.00
Perpetual, Regular B'r'gs, Jap.	$18.00
Monarch Extra (17 in. case), Roller Bearing, Nickeled	$36.00
Monarch Extra (17 in. case), Roller Bearing, Japanned	$33.00
Auditorium (26 in. case), Roller Bearing, Nickeled	$54.00
Mammoth (30 in. case), Roller Bearing, Nickeled	$60.00

NOTE.—Rebates: 50c per dozen on three-dozen lots; $1 per dozen on five-dozen lots; $2 per dozen on ten-dozen lots; $2.50 per dozen on twenty-five-dozen lots.

Streator Metal Stamping Co.:

	℔ doz.
Eureka Japanned	$15.00
Model E, Sanitaire	℔ doz $25.00
Model A, Sterling	℔ doz. $25.00
Model B, Sterling, Nickeled	℔ doz. $23.00
Model B, Sterling, Japanned	℔ doz. $21.00
Model C, Sterling	℔ doz. $21.50
Model D, Sterling	℔ doz. $19.50

Tacks, Finishing Nails, &c.

New List, May 1, 1905.

American Carpet Tacks..90&30%
American Cut Tacks..... 90&30%
Swedes Cut Tacks..... 90&30%
Swedes' Upholsterers'.... 90&10%
Gimp Tacks..... 90&10%
Lace Tacks..... 90&10%
Trimmers' Tacks..... 90&30%
Looking Glass Tacks..... 65%
Bill Posters' and Railroad Tacks. 90&10%
Hungarian Nails..... 80&20%
Finishing Nails..... 70%
Trunk and Clout Nails..... 80%

NOTE.—The above prices are for Standard Weights. An extra 5% is given on Medium Weights, and an extra 10&5% is given on light weights.

Miscellaneous—

Double Pointed Tacks..... *90¢ or 5 tens*

See also Nails, Wire.

Tanks, Oil and Gasoline—

Earh R. M. Co.: Gal.	Oil Emerald	Oil Queen City
30	$3.40	$3.65
60	$4.25	$4.50

Wilson & Friend Co.: Gal.	Gasoline	Oil
30	$2.75	$3.00
60	$3.50	$4.00
120	$5.00	$5.75

Tapes, Measuring—

American Asses' Skin ..50@—%
Patent Leather..... 25@30&5%
Steel ..... *33 1-3&5%*
Chesterman's..... 25@25&5%
Keuffel & Esser Co.:
Favorite, Ass Skin..... 40&10@50%
Favorite, Duck and Leather..... 25&5@25&10%
Metallic and Steel, lower list, 35@35&5%; Pocket, 35@35&5%.
Lufkin's:
Asses' Skin..... 40&10@50%
Metallic ..... 30@30&5%
Patent Bend, Leather.... 25&5@25&10%
Pocket ..... 40@40&5%
Steel ..... 33⅓@35%
Wiebusch & Hilger:
Chesterman's Metallic, No. 34L, etc. 25%
Chesterman's Steel, No. 1038L, etc. 35%

Teeth, Harrow—

Steel Harrow Teeth, plain or headed, ⅝-inch and larger... per 100 lbs. $2.75@$5.00

Thermometers—

Tin Case..... *80&10@80&10&5%*

Ties, Bale—Steel Wire—

Single Loop..... *80&10&5%*
Monitor, Cross Head, &c. 70&2½%

Brick Ties—

Niagara Brick Ties..... 25&10%

Tinners' Shears, &c.—

See *Shears, Tinners', &c.*

Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.

Tire Benders, Upsetters, &c.

See *Benders and Upsetters, Tire.*

Tools—Coopers'—

L. & I. J. White..... 20@20&5%

Hay—

Myers' Hay Tools..... 50%
Stowell's Hay Carriers, 50%; Hay Forks, 50%; Fork Pulleys, 50%.

Miniature—

Smith & Hemenway Co.'s, Davidson 25%

Saw—

Atkins' Cross Cut Saw Tools.... 35&5%
Simonds' Improved..... 35⅓%
Simonds' Crescent..... 25%

Ship—

L. & I. J. White..... 25%

Transom Lifters—

See *Lifters, Transom.*

Traps—Fly—

Balloon, Globe or Acme, ***doz.*** *$1.15@$1.25; gro..... $11.50@12.00*
Harper, Champion or Paragon, doz. $1.25@1.40; gro. $13.00@13.50

Game—

Imitation Oneida..... *70&10%*
Newhouse ..... 40@40&5%
Hawley & Norton..... 65%
Victor ..... 70&10%
Oneida Community Jump..... 50%

Mouse and Rat—

Mouse, Wood, Choker, ***doz. holes*** *12¢*
Mouse, Round or Square Wire, ***doz.*** *85@90¢*
Marty French Rat and Mouse Traps (Genuine):
No. 1, Rat, ℔ doz., $13.25; case of 24 ..... $11.50 doz.
No. 3, Rat, ℔ doz., $6.50; case of 50 ..... $5.75 doz.
No. 3½, Rat, ℔ doz. $5.25; case of 72 ..... $4.70 doz.
No. 4, Mouse, ℔ doz. $3.85; case of 150 ..... $3.00 doz.
No. 5, Mouse, ℔ doz. $3.00; case of 150 ..... $2.25 doz.

Trimmers, Spoke—

Wood's E 1..... 50%

Trowels—

Disston Brick and Pointing..... 25%
Disston Plastering..... 20%
Disston "Standard Brand" and Garden Trowels..... 30%
Kohler's Steel Garden Trowels, ℔ gro., 5 in., $4.80; 6 in., $6.00.
Never-Break Steel Garden Trowels.. ℔ gro. $6.00
Rose Brick and Plastering..... 25&5%
Woodrough & McParlin, Plastering. 25%

Trucks, Warehouse, &c.—

B. & L. Block Co.:
New York Pattern..... 50&10%
Western Pattern..... 60&10%
Handy Trucks..... ℔ doz. $16.00
Grocery ..... ℔ doz. $15.00
Daisy Stove Trucks, Improved Pattern ..... ℔ doz. $18.50
McKinney Trucks..... each $10.00
Model Stove Trucks..... ℔ doz. $18.50

Tubs, Wash—

M'f'gr's list, price per gross.

No.	0	1	2	3
Galvanized.	*$6½*	*$76*	*$8½*	*$96*
Galvanized Wash Tubs (H. M. Co.):				
No.	1	2	10	20
Per doz., net.	$5.70	6.30	7.20	6.60

10&5%
30
7.20 8.10

Twine, Miscellaneous—

Flax Twine:
No. 9, ¼ and ⅛-lb. Balls. 23@25¢
No. 12, ¼ and ⅛-lb. Balls. 21@22¢
No. 18, ¼ and ⅛-lb. Balls. 18@20¢
No. 24, ¼ and ⅛-lb. Balls. 17@19¢
No. 36, ¼ and ⅛-lb. Balls. 16@18¢
Chalk Line, Cotton ¼-lb. Balls ..... *26@31¢*
Cotton Mops, 6, 9, 12 and 15 lb. to doz...... *11@19¢*
Cotton Wrapping. 5 Balls to lb., according to quality... 15½@23¢
American 2-Ply Hemp, ¼ and ½-lb. Balls..... 14½@15½¢
American 3-Ply Hemp. 1-lb. Balls ..... 15½@16½¢
India 2-Ply Hemn, ¼ and ½-lb. Balls (Spring Twine). 10½@11½¢
India 3-Ply Hemp, 1-lb. Balls 10½@11½¢
India 3-Ply Hemp, 1½-lb. Balls. 10@11¢
2, 3, 4 and 5-Ply Jute. ¼-lb. Balls ..... 13½@14½¢
Mason Line, Linen, ½-lb. Bls. 47¢
No. 2½ Mattress. ¼ and ¼-lb. Balls, according to quality. 30@60¢
Wool, 3 to 6 ply.... B 9¢; A 10¢

Vises—

Solid Bo..... *50@50&10%*

Parallel—

Athol Machine Co.:
Simpson's Adjustable..... 40%
Standard 40%
Amateur 25%
Columbian Hdw. Co..... 40%
Emmert Universal:
Pattern Makers' No. 1, $15.00; No. 2, $12.50.
Machinist and Tool Makers' No. 4A, $12.50; No. 6A, $10.00; No. 10A, $22.50.
Presto Quick Acting, Adjustable Jaw, 25@25&10%; Solid Jaw, 35@35&10%
Tiger Machinists'..... 40%
Fisher & Norris Double Screw, net, each, Nos. 2, $10.50; 3, $16.00; 4, $20.50; 5, $27.00.
Fulton Mach. & Vise Co.:
Reed, Swivel..... 25%
Star, Solid Jaw..... 40%
Hollands':
Machinists' ..... 40@40&5%
Keystone ..... 65&10&70%
Lewis Tool Co.:
Adjustable Jaw..... 30%
Monarch, 50%; Solid Jaw..... 50%
Massey Vise Co.:
Clincher 40%
Perfect, 15%; Lightning Grip..... 15%
Merrill's 20%
Millers Falls Oval Slide Pattern. 60&10%
Parker's:
Victor, 20@25%; Regulars..... 20@25%
Vulcan's ..... 40@45%
Combination Pipe..... 55@60%
Prentiss ..... 20@25%
Snediker's X. L..... 33⅓%
Stephens' 33⅓%

Saw Filers—

Disston's D 3 Clamp and Guide, ℔ doz., $24.00, 30%; Clamps..... 30%
Perfection Saw Clamps, ℔ doz.... $4.50
Reading 60%
Wentworth's Rubber Jaw, Nos. 1, 2 and 3..... 50%

Wood Workers—

Fulton Mach. & Vise Co.:
Reed 25%
Star 40%
Massey Vise Co.:
Lightning Grip, 15%; Perfect..... 15%
Wyman & Gordon's Quick Action, 6 in., $6.00; 9 in., $7.00; 14 in., $8.00.

Miscellaneous—

Holland's Combination Pipe..60@60&5%
Massey's Quick Action Pipe..... 40%
Parker's Combination Pipe:
87 Series, 60%; 187 Series, 60&5%; No. 870, 40%.

Wads—*Price per M.*

B. E., 11 up..... *60¢*
B. E., 9 and 10..... *70¢*
B. E., 8..... *80¢*
B. E., 7..... *80¢*
P. E., 11 up..... *$1.00*
P. E., 9 and 10..... *1.25*
P. E., 8..... *1.50*
P. E., 7..... *1.50*
Dis. 15%
Ely's B. E., 11 and larger. $1.70@1.75
Ely's P. E., 12 to 20.... $3.00@3.25

Ware, Hollow—Cast Iron, Hollow—

Stove Hollow Ware:
Enameled ..... *45&10%*
Ground ..... *50&5%*
Plain or Unground..... *60%*
Country Hollow Ware, per 100 lbs. *$3.00*
White Enameled Ware:
Maslin Kettles..... *65&10%*
Covered Wares:
Tinned and Turned..... *35&10%*
Enameled ..... *45&10%*
See also *Pots, Gluc.*

Enameled—

Agate Nickel Steel Ware..... 60%
Iron Clad Ware..... 70&10%
Lava, Enameled..... 40&10%
Never Break Enameled..... 50%

Tea Kettles—

Galvanized Tea Kettles:

Inch.....	*6*	*7*	*8*	*9*
Each	*45¢*	*50¢*	*55¢*	*65¢*

Steel Hollow Ware—

Avery Spiders and Griddles..65@65&5%
Avery Kettles..... 60%
Porcelained ..... 50&5@50&10%
Never Break Spiders and Griddles.. 65&5%
Never Break Kettles..... 60%
Solid Steel Spiders and Griddles. 65&5%
Solid Steel Kettles..... 60%

Warmers, Foot—

Pike Mfg. Co., Soapstone....40@40&10%

Washboards—

Solid Zinc: ℔ doz.
Crescent, family size, bent frame. $3.70
Red Star, family size, stationary protector $3.70
Double Zinc Surface:
Saginaw Globe, family size, stationary protector..... $3.25
Cable Cross, family size, stationary protector..... $3.40
Single Zinc Surface:
Naiad, family size, open back, perforated $2.90
Single Saginaw Globe..... $2.75
Brass Surface:
Brass King, Single Surface, open back $3.65
Nickel Plate Surface:
No. 1001 Nickel Plate, Single Surface $3.65
Glass Surface:
Glass King, Single Surface, open back $3.65
Enamel Surface:
Enamel King, Single Surface, ventilated back..... $3.65

Washers—Leather, Axle—

Solid ..... *50&10@80&10&10%*
Patent ..... *90@90&5%*
Coil: ¼ ⅜ ½ ¾ 1 1¼ Inch.
10½¢ 11½¢ 12½¢ 16¢ per box

Iron or Steel—

Size bolt.... 5-16 ⅜ ½ ⅝ ¾
Washers.... $5.90 5.90 3.70 3.50 3.30
The above prices are based on $5.50 off list.
In lots less than one keg add ½¢ per lb.; 5-lb. boxes add ½¢ to list.

Cast Washers—

Over ½ inch, barrel lots..... per lb. 1¾@2¢

Weather Strip—Flexible Felt—

Lined, per 100 ft., $2; $3; $4..... 40&10%
Moore's Unlined, per 100 ft., $2; $3; $4 ..... 50&10%

Wedges—

Oil Finish..... *lb., ..@3¢*

Weights—Hitching—

Covert Mfg. Co..... 30&2%

Sash—

Per ton, f.o.b. factory:
Eastern District..... *$30.00*
Southern Territory. $24.00@25.00
Western and Central Districts ..... $25.00@28.50

Wheels, Well—

8-in., $1.55; 10-in., $2.00; 12-in., $2.50; 14-in., $4.00.

Wire and Wire Goods—

Bright and Annealed:
6 to 9..... *80%*
10 to 18..... *80&2½%*
19 to 26..... *80&7½%*
27 to 36..... *80&2½%*
Galvanized:
6 to 9..... *75&5%*
10 to 14..... *75&7½%*
15 to 16..... *72½&10&2½%*
19 to 26..... *75%*
27 to 36..... *72½%*
Coppered:
6 to 9..... *75&5%*
10 to 14..... *75&7½%*
15 to 18..... *72½&10&2½%*
19 to 26..... *75&10&5%*
27 to 36..... *75%*
Tinned:
6 to 14..... *75&10&2½%*
15 to 18..... *75&7½%*
Brass..... *24¢ lb., base*
Copper ..... *32¢ lb., base*
Cast Steel Wire..... *50%*

Spooled Wire—

Annealed and Tinned, *70¢10@75¢10%*
Brass and Copper.. *60¢10@65¢10%*
Retailers' Assortments, per box, *$2.25@$2.50*

Wire Clothes Line, see Lines.
Wire Picture Cord, see Cord.

Bright Wire Goods—

Steel Wire Goods..... *90¢10%*
Brass Wire Goods..... *85¢25%*
Brass Cup and Shoulder Hooks, *80¢15%*

Wire Cloth and Netting—

Galvanized Wire Netting.. *80¢5%*
Painted Screen Cloth, 100 ft., $1.35
Standard Galv. Hardware Grade: Per 100 sq. ft.
Nos. 2, 2½ & 3 Mesh..... *$3.40*
Nos. 4 and 5 Mesh..... *$3.65*
No. 6 Mesh..... *$3.90*
No. 8 Mesh..... *$4.40*

Wire, Barb—See *Trade Report*

Wrenches—

Agricultural ..... *75@75&10%*
Alligator or Crocodile.. *70¢10@75%*
Baxter Pattern S Wrenches... *70&5@70¢10%*
Drop Forged S..... *45@45&5%*
Acme ..... 60&10%
Alligator Pattern, 70%; Bull Dog..70%
Bemis & Call's:
Adjustable S, 40%; Adjustable S Pipe, 40%; Briggs Pattern, 40%; Combination Bright, 40%.
Steel Handle Nut..... 50%
Combination Black..... 40&5%
Merrick Pattern..... 50%
Boardman's 40%
Coes' Genuine Knife Hdl..40&10&5&5%
Coes' Genuine Steel Hdl..40&10&5&5%
Coes' Genuine Key Model..40&10&5&5%
Coes', Genuine Hammer Handle..... 40&10&5&5%
Coes' "Mechanics'"... 40&10&10&5&5%
Donohue's Engineer..... 40&10%
Eagle 70%
Elgin Wrenches, ℔ doz..... $6.25
Elgin Rethreading Attachment, only with one die, ℔ doz..... $6.25
Elgin Extra Dies, ℔ doz..... $3.00
Elgin Extra Jaws, ℔ doz..... $1.75
Elgin Monkey Wrench Pipe Jaws, ℔ doz..... $2.10
Gem Pocket..... 30%
Hercules 10%
W. & B. Machinist:
Case lots..... 50&5%
Less than case lots..... 50%
W. & B. Railroad Special:
Case lots..... 50%
Less than case lots..... 40&10&5%
Solid Handles, P., S. & W..... 50&5%
Stillson 65%
Vulcan Chain..... 50%
Vaughan & Bushnell Mfg. Co., Handy, 70%; Always Ready..... 50%

Fruit Jar—

Triumph Fruit Jar Wrench, 5 gross lots, ℔ gross $7.50; ℔ doz..... $0.80

Wrought Goods—

Stables, Hooks, &c., list March 17, '02..... *87½&10@—*

Yokes, Ox, and Ox Bows—

Fort Madison's Farmers' & Freighters'..... list net

Zinc—

Sheet.....per 100 lb., $8.85@$9.10